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THE
G A R D E N E R
A M A G A Z I N E
OF
HORTICULTURE AND FLORICULTURE

EDITED BY
WILLIAM THOMSON
DALKEITH GARDENS
AUTHOR OF 'A PRACTICAL TREATISE ON THE CULTURE OF THE GRAPE VINE'

1868

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THE GARDENER.

JANUARY 1868.



It affords us much pleasure to appear before our readers on this the first day of a new year, and to wish them health and happiness during its course. We also beg of them to accept our gratitude for the liberal patronage they have extended to us during the year that has closed—far exceeding, as it has done, our most sanguine anticipations. This we accept as an incentive to renewed efforts on our part, so that nothing may be left undone that can enhance the value of the ‘Gardener’ as a compendium of useful, practical horticultural literature.

To our numerous contributors are due our warmest thanks for their able and continuous support in the past, which we accept as an earnest of what they mean to do in the future. The consciousness of many defects on our own part increases our appreciation of what they have enabled us to accomplish.

We will not occupy valuable space by any detailed statement of the arrangements we have made for the present year—we prefer letting them speak for themselves. We live in an age of progress, and we hope to keep pace with the times; to say less would do us injustice, to say more might deceive our readers, and we have no wish to do either.

GLEANINGS OF THE MONTH.

UNFORTUNATELY the extra penny in the pound in the income-tax affects the gardener but little ; still, indirectly, it produces certain effects by which he and others are benefited. Every eye is now directed towards Abyssinia ; we are becoming familiar with the names of places of which we never heard before ; we daily learn more about the mountain-ranges, the river-valleys, the narrow passes, and the widespread plateaus in a land of which we knew next to nothing. Taking advantage of this craving for information felt more or less by all, the daily newspapers had special correspondents upon the soil before a single soldier landed. Their accounts contain very much information about the physical geography of the country ; and now and then, among the flotsam and jetsam which they collect, there is a scrap bearing upon plants or vegetable products. I have just hit upon such a bit—only a few words in substance, but very suggestive to me. The writer was describing the food of the natives, and his last words were, “ And the root of a kind of Plantain.”

When I was a very small boy, there were few books I devoured with more avidity than the *Travels of Bruce, Clapperton, and Mungo Park*. Years afterwards I learned to my sorrow that some of the tales told by Bruce were not to be believed—the public of his day treated him just as Du Chaillu was by us a few years ago. The same result has occurred in each case ; many of their most untruthful-looking stories have since been proved true. One of Bruce's most unlikely stories was, that the Abyssinians subsisted to a great extent upon the stem of a kind of Plantain. Everybody knew that in all parts of the world the fruit only of these plants was eaten, and the stem a mere mass of fibres. Bruce was evidently wrong, and was trying to palm off a traveller's tale. Years rolled on ; one who had made an expedition into that dangerous district brought away some seeds with him of plants which seemed to him to be unlike those which grow in the adjoining countries. He forwarded these to the Royal Botanic Garden at Kew ; somewhere about the year 1858 they were carefully sown, and the queer little black triangular seeds, as they rose above the surface, proved themselves to be some kind of *Musa*. I had heard of the growth of the Bean-stalk belonging to the far-famed Jack, and I had seen some specimens of rapid vegetation, but *Musa Ensete* (as it afterwards came to be called) excelled them all. The plant, which was intended to be a representative specimen, seemed to want potting continually—it was always attempting to get pot-bound. In about two years it became necessary to grow it in a tub 5½ feet square, and nearly 5 feet deep. The size of the plant at that time was as follows :

Circumference of the stem 6 inches from the ground, 6 feet 3 inches; height from the surface of the soil, 26 feet; leaves each about 15 feet long and 3 feet broad. The plant did not increase much after that time, for its flower-spike was in course of formation; there were fifteen magnificent leaves upon it, the midrib of each being of a rosy-red colour; a more imposing plant I never saw. In a few months its flowers had opened, its seed was fertilised; its fruit proved to be perfectly useless in an edible point of view. Here, then, we had found Bruce's Plantain! The seed ripened, the stem was cut down, and we were all so anxious to get a bit of its core, that we might try the flavour of this new vegetable. Carefully we cooked it, trying over and over again to see when it should become tender, and each time nauseated by the stench from the pot. At last our patience could stand it no longer, we turned the mess out, and of all the horrible things I ever saw that was decidedly the nastiest; the water in which it was boiled was purple, and the "Cabbage" was indescribable. Not one of us tasted a mouthful of that feast we had looked forward to for so many months. Without a doubt, the Abyssinians cut down the Musa stem just before the plant begins to form its fructification; probably the stem would then be succulent, and it may be even with a sweetish taste; but I'll never try again, and I hope my military fellow-countrymen will select the stem at the proper period of its growth, should they think of trying this Cabbage with their beef. But still we must look upon Musa Ensete as being without a rival for the grand appearance it makes when grown at Kew, the Crystal Palace, Edinburgh, Chatsworth, or such places as there is room for it to develop itself to the full; never in its native country would it be seen in such perfection, for there the wind would tear the leaves into ribbons, and there would never be more than two or three entire ones at a time. The Musa, which nobody believed Bruce ever saw, has through the agency of Kew been distributed to all our colonies.

Humboldt remarks that there is no plant which strikes the European traveller as being so characteristic of tropical scenery as the Plantain: east or west, the negro plants the Musa near his hut for shade, shelter, and for food; and the colonist keeps it near him as a thing of beauty. It furnishes (according to the same authority) a greater weight of food upon the same space of ground, and in the same time, than any other plant. Its cultivation suits the character of the not particularly industrious nigger; for when the bunch of fruit is ripe, he has simply to cut down the stem, and leave the sucker, already 2 or 3 feet high, to succeed it. Where the genuine Musa is grown with some attention there are a great number of named varieties, as among our Apples and Pears; some are eaten raw, some cooked, some when they are fully ripe, and

others, again, when they are quite green. Some of the best varieties have been grown to great perfection in this country—the heaviest bunch being that probably which was grown by Mr A. Scott at the seat of Sir George Staunton, and which gained for him a gold medal from the Royal Horticultural Society. Sir George was for many years Ambassador at the Court of China, and he was fond in his latter days of tasting now and then the fruits with which he had there become familiar. The Litchie, the Longan, the Guava, the Rose-apple, and other Eastern fruits were grown and ripened freely; others, like the Mangosteen, the Bread-fruit, Allspice, Nutmeg and Clove, and the Chocolate, never bore fruit. One plant, however, was seldom if ever without fruit ready for the table, and that was *Musa Cavendishii*; a succession of plants kept up a constant supply of fruit; they had a little house to themselves (not growing more than 7 feet high); planted out in good soil, their cultivation was extremely simple, and they gave far less trouble than the number of Pines which would have occupied the same space. This is the only kind which can profitably, and with any degree of certainty, be grown for its fruit in any but the largest gardens.

All the Plantains are not of such easy growth as those to which we have referred. *Musa superba*, a dwarfish Indian species, is a most difficult plant to cultivate. At first it grows kindly enough, and may attain some 6 or 7 feet in height to the top of its leaves, and then suddenly fails; more and more sickly it will become, and the cause be generally undiscoverable. So have I seen it with several specimens.

There are several species of this genus which are dwarf enough to be grown in any ordinary conservatory, and exquisite plants they make for mixing with the Palms, Ferns, &c., used in the decoration of the ballroom, a practice now daily becoming more and more common. *Musa rosacea* and *M. coccinea* are the best (though the old dwarf *M. zebrina* deserves a place) for this purpose. The rosy spathe, the intensely scarlet one of the first, will remain a long time in perfection, if not kept in too strong a heat, and all moisture be prevented from gathering about the inflorescence.

When we have spoken of the *Musa* as an article of food, and as specially adapted for decorative purposes, we have by no means exhausted the number of uses to which it is applied. I have some friends who are largely engaged in the fibre trade; and in going through their stores a few months ago, I was perfectly astonished at finding what prices Plantain fibre, and several others which were hardly in use ten or fifteen years ago, had now risen to. The statistics relative to its importation would be hardly credible; but as such dry matters are not

exactly within our province, we will leave that branch of the subject. I must, however, mention one fact. Mr Speight of Clerkenwell a few years ago manufactured some very ornamental mats, tassels, harness, and the like, from the fibre of *Musa textilis*. One step further, if it is not a secret: it is strongly to be suspected that this fibre enters pretty strongly into the formation of those exquisite chignons, supposed to be such an attractive feature of the British belle.

There are several newly imported varieties, both of the tall-growing and dwarf divisions of the family, of which I have made no mention; they do not appear to be any improvement on the older kinds. Grown in extra heat and moisture, they will while young present a most attractive appearance—sufficient, indeed, to draw the money from the pocket of any proprietor with a taste for plants. See them, however, five years afterwards, and I believe you will say the money might have been better spent. In the cultivation of their collection of Plantains at Kew, they have now adopted the plan of allowing the old leaves to droop and cover the stem, instead of cutting them off in the old way. This, no doubt, has a beneficial effect, for it must protect the stem from excessive evaporation; at the same time, too, it gives the plants a more natural appearance.

There seems now but little doubt of the safety of our old friend Dr Livingstone. All the information we get inclines us to the belief that he is still pushing his way into districts previously unexplored.

It is with much pleasure that I learn, from a short paragraph in the 'Times,' that "the Government have resolved to resume the storm signals devised by the late Admiral Fitzroy, the value of which was so forcibly urged upon their attention by Colonel Sykes, M.P.; Mr David Milne Home, the Chairman of the Scottish Meteorological Society; and Mr Glaisher, at the last meeting of the British Association at Dundee." During the last two months, the atmosphere, and even the solid globe itself, has been shaken and torn and convulsed. From whatever quarter of the compass our news arrives, it tells of nothing but frightful storms, of hurricanes sweeping the sea, of earthquakes and fearful eruptions in all the volcanic countries.



ENGLISH VERSUS FRENCH GARDENERS.

At a time when a controversy as to the merits of English as compared with French gardeners is raging in two of our weekly contemporaries, the following picture may interest our readers: Let them imagine a young French gardener leaving his situation in Northern France, where

he acted as foreman, and arriving within 30 miles of London to take the management of a lady's garden. She had, previous to his arrival, an English gardener and a large staff of men. The young Frenchman, however, found the place in a wretched condition. The whole walks and carriage-drives were made of loose sand; the lakes full of mud; nothing deserving the name of a flower-garden; the old orangery, and such other glass as there was, in a dirty miserable state. At the end of six years this young Frenchman has so changed the aspect of the whole place that no one would suspect it to be the same. The lakes are all cleared out, though they are of some 20 acres in extent. The roads and walks are gravelled with macadamised gravel; the pleasure-ground is entirely remodelled; so is the kitchen-garden; even the *cordon* trees are in health. New ranges of vineries, pine-stoves, plant-houses, and a large conservatory are erected; and such is the excellence of the Grapes shown at the Exhibition of the Royal Horticultural Society of London in 1866, that Meredith, Hill, Fowler, Henderson, Miller, and Co. stand pale and aghast before them. They get the grand medal, and a deputation of the Horticultural Society, with the noble President at its head, and Dr Hogg as mentor, is sent down into the country to investigate and report on the French system of Grape-growing. The Vines are examined; their age ascertained; the soil in the border probed to its depth: much shaking of heads takes place, many shoulders are shrugged, but the report has not yet appeared. Another season rolls on, and in 1867 there is a Universal Exhibition held in London, at which there is a fortnightly exhibition of horticultural subjects. At this the young Frenchman again occupies the place of honour as a gardener; he shows the best forced Roses, hothouse plants, temperate-house plants, pot Vines in fruit, cut Grapes, *Vegetables*, *Dracænas*, *Crotons*, *Allamandas*, &c.—taking in all eighteen prizes, eleven of which are first prizes, five of the latter being for Grapes. At the conclusion of the season he receives a medal of honour and a work of art, as having achieved the highest honours as a gardener, distancing all his English brethren, notwithstanding they are better acquainted with the climate, and are supposed by some writers in France who have made a run through England, and have partaken of some fine Asparagus at Simpson's in the Strand and the London Tavern, and seen some fine Lettuces in Paris that came from England, to be far before the French gardeners in the practical application of horticultural knowledge. Reverse this whole picture, and you have exactly what Mr Knight, gardener at the Château Pontchartrain, some 30 miles west of Paris, has achieved in France. He has done more to advance all that is useful in real practical horticulture in seven years in France than probably any other man ever did, and nothing would give us more

pleasure than to see a French gardener come to Britain and shoot as far ahead of British gardeners as Mr Knight has done of those amongst whom he dwells. Let no one suppose that Mr Knight is not sensible that in some respects much may be learned from French gardeners. He is ever ready to give them credit in those respects in which they deserve it, as will be seen in a series of articles from his pen that we hope to publish during the year, when both the strong and weak points of French horticulture will be impartially stated. We also beg of our French readers to believe that what we have written on this subject is done without Mr Knight's knowledge or inspiration, and that he is ever ready to give them credit for whatever they excel in. Our object is to dispel a delusion not intentionally propagated by the writer of the articles on French horticulture in the 'Times,' but resulting from a misconception of them. We at once admit that France is a great Grape and Pear producing country—the former very inferior as compared with those grown by British gardeners; the latter of great size and excellence, though not superior in flavour to those grown in England, in the most favoured localities as to soil and climate, as was proved by the fact that Mr Ingram of Frogmore carried off the head prize in competition with some of the best French growers some years ago in London.

The French cottagers most undoubtedly excel in the cultivation of standard Pear-trees, as we observed in a run of 400 miles through France. In this they are as far before the Englishman of the same class as he is before them in the cultivation of Potatoes; and the question is simply this, Which, in the circumstances, is the most profitable? We aver that the Englishman is as well off with his Potatoes and Cabbage as the Frenchman is with his Pears, Lettuces, and Asparagus. French gardeners are said to be hard-working men, ill-paid, and very civil. We do not doubt this. Such of them as we saw were very civil: we made no discovery as to their pay, and certainly the other quality did not strike us particularly.



FRUIT - CULTURE.

THE FIG.

Character and History.—The Fig belongs to the rather numerous genus *Ficus*. The edible or garden Fig, *Ficus Carica*—probably so named from the circumstance that excellent Figs abounded in Caria in Asia Minor—belongs to the class Polygamia, order Diœcia, of the Linnæan system, and of the natural order Artocarpacæ, or the

Bread-fruit family, and the sub-order *Moreæ*, which also includes the Mulberry. The fruit of the Fig is a large hollow receptacle, of a succulent character, containing the flowers in its interior. The male flowers occupy the superior part of the receptacle, and the female, which are the most numerous, the bottom; each ovary becomes a seed, surrounding itself with a sugary pulp, which, together with the receptacle, becomes the fruit.

The Fig-tree has been known to history since its very dawn, being the first tree to which a distinctive name is given in the Bible. The tree is a native of the East, where it has at all periods formed an important part of the food of the people. It is indigenous to Western Asia, Northern Africa, and the south of Europe, including Greece. The figs of the latter country were so famed for their excellence that it is said of Xerxes that he undertook the conquest of Attica because of the high quality of the figs of Athens. Many ancient authors refer in terms of high praise to the Fig—none more so, though rather by implication than direct, than the prophet Habakkuk, who places the loss of the Fig crop at the head of a list of national calamities, which, if anything could have done so, would have shaken his faith in his Maker, and that it did not do so is to the present day looked upon as a triumph of faith. Palestine was described as “a land of Wheat, Barley, Vines, Fig-trees, and Pomegranates.” The tree is deciduous in every country where it grows, and in favourable circumstances attains to the height of 30 feet, with a trunk 2 feet in diameter. It is easily propagated by cuttings, layers, and root-suckers. In this respect it is the most docile of trees. New varieties can also be raised from the ripened seeds, but this is seldom attempted in this country. At the present day several thousands of tons of dried Figs are annually imported into Britain from Turkey, Greece, Italy, and Spain, and as a dried fruit it is both wholesome and nutritious. It abounds in Grape-sugar, which exudes through the skin in the process of drying, and is the sugar adhering to them in a dried state.

Notwithstanding the many excellent qualities of the Fig as a green fruit when cultivated in this country under glass, it has never become so general a favourite, or so extensively cultivated, as its real merits entitle it to be. This, we think, has arisen chiefly from the way it is treated. The impression prevails, not so much among gardeners as among their employers, that Figs may be grown in any dark corner or back wall, under Vines or whatever else may be the principal occupant of a hothouse. In such situations the Fig will certainly grow and bear a few fruit, but alas for its reputation if it depends on such productions! The truth is, that no fruit requires the direct rays and influence of all the sun we can let it have in this country more than

the Fig does, if it is to be grown to perfection, and an inferior Fig is as poor a fruit as a fine one is excellent. Keeping this in view, we advise that its branches should be so trained as to get all the light circumstances will admit of, but never so near the glass that their leaves touch it. A stream of fresh air as well as sunshine should play over and amongst its foliage on all favourable opportunities.

Soil suitable for the Fig.—The Fig is a rapid grower and coarse feeder, and when supplied with rich compost makes long unfruitful growths. To prevent this, and induce the formation of short-jointed fruitful wood, the following compost will be found suitable for the formation of the borders: When the trees are to be planted out, two parts maiden loam from old pasture-land, one part road-scrappings, and the other made up of old lime-rubbish, brickbats, and chalk. For pot-cultivation add a few ground bones and a small portion—equal to a tenth of the whole—of horse-droppings.

Formation of the Border.—When the excavation for the border is finished it should have a slope of 1 foot in 20 to the south, and be well drained, so as to remove all superfluous water; on this there should be a bed of concrete laid down 4 inches thick, to prevent the roots getting into the subsoil. The number of trees to be planted in the house being determined, divide the space into an equal number of compartments by means of 4-inch brick divisions set in cement, so as to insulate each tree. In this way each individual tree can receive the special root-treatment it requires. The tree that sets an abundant crop of fruit, and is making short-jointed fruitful wood, can during its season of growth receive an abundant supply of liquid manure; while that which shows little or no fruit, and is making vigorous unfruitful wood, can receive a course of treatment of the opposite character. This can never be accomplished when the whole border is common to all the trees, as is generally the case. The arrangement suggested is a very important one, and soon repays the cost of the few intersecting walls.

The Fig-house.—It is difficult to say which is the most suitable form of house for growing Figs. They may be grown in any glass structure, with moderate heating power and ample ventilation. We have seen them grown well in pits from which the sashes could be pulled down at pleasure, with no path inside; in pits with a path inside along the back wall; in houses such as Peaches are generally grown in, trained to a front trellis, and against the back wall, the front trellis not being so high as to intercept the rays of the sun from the trees on the wall; and in old pine-stoves, planted out in the pit, we have seen some of the finest Figs we ever beheld. For late summer crops they may be grown against glass-covered walls, with no artificial means of heating, south

of York ; and in the most favoured climates of the Lothians, and some other counties of Scotland, in orchard-houses along with Peaches and Nectarines. In the midland counties of England, and more especially south of London, Figs ripen very well in average seasons on the open walls ; but we have known their wood to get killed to the ground during a severe winter in the county of Middlesex when left uncovered : we have also known them to be entirely barked and destroyed by ground-mice when covered up for the winter with dry Fern.

The heating power of a fig-house where Figs are to be forced early should be on a par with a peach-house used for the same purpose, or about a third less than what is required for an early vinery : for a house 13 feet wide, 13 feet high at back, and 4 feet at front, not less than three rows of 4-inch pipe round front and both ends. There should be ample means for admitting air at the front, and of allowing it to escape at the top, as the quality, colour, and flavour of all fruit depend greatly on thorough ventilation.

(To be continued.)



WASPS.

WHATEVER may be the experience of others, I have never observed any decrease in the number of these pests unless effective means are employed to destroy the nests. For the most part, the job is intrusted to the garden men and boys, or the villagers, who care but little whether the wasps are killed, so long as they can present a sufficient amount of comb to insure the reward.

Generally the attack commences before the entire community has returned home, and sometimes there are stragglers who absent themselves all night—the lazy portion of the community that sleep where they feed. Bungling the work produces a great deal more harm than good—the swarm is disturbed, and dispersed over a larger surface ; there is no home-retreat, and fruit is attacked with greater ferocity than before : at least such is my experience.

For a number of years past I have bought the queen wasps during the spring months—that is, so soon as they make their appearance—and continue to receive them till the beginning of June. At first I paid for each three halfpence, which produced the enormous number of 1182—enough to clear the county. I made an agreement that none were to be caught beyond the boundary of our own parish, but I afterwards found that the premium was so tempting that the

boys and girls of the adjoining parishes turned the transaction into a commercial speculation, selling their wasps to our parishioners for a penny, who received the full amount, securing a profit of a half-penny on each wasp. What was to be done to stop this nefarious traffic? As I would not allow myself to be cheated, I reduced the price to a penny, which checked the speculative spirit, without, I believe, raising in the slightest degree the moral standard.

An attack, more cunningly devised, was made by some of the more designing boys to promote an increase of next year's revenue. They kept throughout the winter months wasps of the preceding autumn, and offered them the following spring; but the dodge was too transparent to succeed—deception over-reached itself. Since adopting the plan of queen-catching, we are never much troubled with wasps—not to such an extent as to give annoyance. Bottles containing saccharine matter are an excellent decoy, and will entrap a great many wasps, but without producing a visible result.

Hexagon netting is far from being a satisfactory protection, for three reasons: First, that it is very expensive in gardens where there is a large extent of wall to cover; second, where wasps are numerous they will eat it in a thousand holes; and, third, it deprives the foliage of light just when sunshine is so essential to ripen the wood. When allowed to remain for any length of time, the leaves turn yellow and drop before they have secreted a proper amount of nourishment to mature the buds, not taking into account the deficiency in the flavour of the fruit. Nothing in creation is without a special purpose, and wasps are useful, but what we complain of is their excess.

A. CRAMB.

TORTWORTH COURT.



NOTES ON GREENHOUSE PLANTS.

(Continued.)

CELOSIAS.

THE remarkable and singularly beautiful features of many of this genus of tender annuals constitute them eminently valuable as well as conspicuous for their unique and extremely diversified constructions; and what adds materially to their qualifications as plants for conservatory decoration, is their long duration of flower, as well as their diversities of shade and distinct rich colours.

With such diversified claims, we deem it safe to venture their introduction as special subjects in our "Notes."

Cockscombs are a division of the family widely known. Their extremely ornamental and singularly-shaped flowers make them valuable alike for conservatory and drawing-room decoration. The colours range from a silver-tinged orange to deep yellow in one strain, and from silvery rose to a shining dark crimson in the other. They vary in height from 1 to 2½ feet; but the dwarf crimson is always preferred for exhibition purposes. Many modes of cultivation have been recommended for this sometimes intractable flower. Too luxuriant growth in its earlier stages renders the flowers insignificant, the stems disproportionately high, the foliage gross and over-numerous. To avoid those undesirable features, some have resorted to cutting the plants over a certain distance from their crowns, and striking their stems anew. Others, again, turn out the plants, disengage the roots from the soil, and plunge them into their pots, allowing the base of the stems to stand on the crocks, for the double object of checking growth, and lowering the plants to what they consider a proper height.

These plans we consider wrong for various reasons, but principally because both rob the plant of all its natural elegance, and stunt and otherwise mar its beauty. So much is this the case, that judges have been known to disqualify a nice group of combs (heads) on the ground that they were only cut over and stuck in their pots; and it was only when their roots were shown that the judges were satisfied they were plants.

Starving or stinting the plants of water when the seed-leaves are fully developed, we consider the better plan, if this is not carried beyond the plants' endurance.

Having thus far endeavoured to show what we consider should be avoided, let us now retrace our steps and take up our subject in proper routine. Supposing the plants are wanted to take their places in the conservatory about the middle of July, the seed ought to be sown in the second week of February, preferring a compost of fibry loam, peat, and silver sand, but the peat rather predominating. Fill the pots one-fourth their depth with broken pots, and cover with moss; then fill up with the compost, levelling the surface and gently tapping the pot on the bench. Then scatter over the seeds and cover them with about a quarter of an inch of the finer portions of the soil, completing the operation with a sprinkling of tepid water through a fine rose, sufficient to moisten the soil an inch below the seeds, but no farther. Plunge the pots near the glass in a frame or pit among sand or sawdust where a bottom-heat of 70° can be maintained with an atmospheric temperature of 65°. Cover the pots with a glass, to exclude noxious vapours arising from the bed, and to protect them from the damp so prevalent at this season; but at the same time attend daily to remov-

ing the condensed vapour that gathers on the under surface of the glass. Watch carefully the first appearance of the young plants to edge up the glass cover, and so admit a little fresh air if the pit is very damp. About the third day is invariably the most dangerous time for the plants, which are then apt to damp off in a body, just when their tender necks have got above the soil. To prevent such a catastrophe, better remove them to a house where the atmosphere is drier, though a few degrees lower in temperature. A dry stove suits them admirably, if the plants are placed near the glass, and slightly shaded in sunny days. Withhold water if they do not absolutely demand it to save life, in which case let them have only a sprinkling overhead, being careful to brush off the particles of water left on the leaves with a feather. Continue to treat in this way until the minute combs indicate their presence in the crowns of the plants. Of course, they will get flagged at times, and perhaps discoloured in the leaves. This cannot be avoided, but take care the leaves do not get permanently damaged. The combs produced, and foliage preserved, the rest is smooth sailing. The day before separating for single transplantation, administer tepid water to the extent of saturating the ball, and shade the plants if the sun shines; then have the plants carefully transferred into pots 3 inches diameter, in a compost similar to that used for the seeds, previously warming it to a comfortable heat for the hand. Plant rather deep in the pots, after which supply water and plunge in heat, keeping close and shaded for a few days. When they have again started, a steady advancement of bottom-heat until it reaches 85° will prove advantageous to the swelling of the combs, along with abundant circulation of air in mild days and copious supplies of water; but by no means should the bed be allowed to get low in temperature.

As soon as the plants have filled their pots with roots, mix thoroughly equal parts sharp river-sand, loam, leaf-mould, and well-decomposed cow-manure; let the whole be warmed before potting, using 6-inch pots for this shift. While potting, the mould should not be made firm—only sent home with a few strokes on the bench, and the surface smoothed off. Finally, attend to regular shifts into larger-sized pots before they get in the least pot-bound, shading after such operations in strong sunshine, abundantly admitting air and supplying water, keeping the crowns near the glass, but never allowing them to come in contact with it, or otherwise get defiled with dirt or dust. Stimulate rather than allow the heat to decrease, but never let it rise above 85°. A little guano added to the water in the proportion of 1 lb. to forty gallons may be applied with good results while the plants are in full growth; but this must be withdrawn when the combs

show signs of maturity of size. At this time the pots should be raised from their plungings and left standing on the surface of the bed, and gradually hardened to suit greenhouse temperature, supplying water in diminished quantities, and on the whole keeping the plants rather dry, which will insure a longer season of bloom.

Celosia Pyramidalis.—This grand section of the group, when well grown, produces its splendid spikes and feathery plumes in astonishing profusion, and will in ordinary greenhouses remain in perfection fully three months. After this they may be cut from their stems and dried, and they will continue to retain their colours and lively appearance throughout the winter. Their great variety makes them an acquisition to the dried bouquet.

The same routine of management as has been advised for the Cockscombs will be found suitable for these, one point excepted. Starving in their case is not desirable at any stage, but rather a steady vigorous growth from the day they appear above ground until indications are shown of flower-forming, when water ought to be partially withheld, or given less abundantly. One thing ought to be kept specially in remembrance—the stronger the plant (if matured), the more massive and lovely the spikes of flowers. And lastly, as their name indicates, they are pyramidal-shaped. This necessitates some attention to training; the lower branches require support, more especially in big plants; and this should be looked to prior to their arriving at full growth, as their weight has a tendency to split them at the junction of the stems.

A. KERR.

(To be continued.)



THE FRENCH MODE OF PRODUCING SALADS IN THE WINTER MONTHS.

It is well known that a Frenchman enjoys a good Salad all the year round; and he not only enjoys it, but he knows how to produce it, and in a way alike economical and practical. He consumes it himself, and he, moreover, likes his neighbours across the Channel to enjoy it with him, providing of course that they pay for it. Pay him, and he will produce it in any quantity from the month of October to the month of April. He understands perfectly well that the *maraîcher* over the water can supply himself and his country in the remaining months, just as he knows to his own profit that he can't do it in the winter months. The French market-gardener, then, is called upon to furnish a supply of Salads not only for his own country, but for others as well,

and notably Great Britain. With these facts two questions naturally crop up—viz., Why is it the French market-gardener is called upon to furnish our markets with Salads during the winter months? and, How is it that we can't supply them ourselves? The first may be answered thus, Because he produces them cheaper and better; and the second answer is, Simply because we don't know how. My object, then, in writing is to impart to my fellow-countrymen all I know, in order that they too may enjoy a good Salad of their own growing, and be more independent of their neighbours, and at the same time keep the enormous sums of money now annually flowing into their neighbours' pockets in their own exchequer.

First of all, I will describe as simply as possible the necessary appliances adopted in France.

The Cloche.—This is a large bell-glass, cast in a cheap form, without a knob, for convenience of storing away when packed one within another like garden-pots. It is about 18 inches in diameter and depth, and very thin for its size. Without this indispensable implement the Salads would be as scarce in France and as costly as they are in England. A thousand of these may be purchased for £40—not a very serious outlay, considering the services they render; and I have not the least doubt but they could be sent to England for £10 extra, to defray carriage and duty. Surely the British glass-blowers could supply them in quantity for this price, when glass is generally so cheap otherwise. Not only do they render service in producing Salads, but in the autumn hundreds of cuttings of all descriptions may be economically struck under them. Asparagus may be forwarded considerably in the spring months by simply putting one over each stool or root. Tarragon, Mint, Chives, Sorrel, Violets, Christmas Roses, Strawberries, and dozens of other things, can be forwarded a month earlier by merely placing a few of these about the garden, and neatly covering with half-rotten stable-dung or litter 6 inches of the lower part of the bell-glass. For convenience the roots could be lifted and laid on a bed of leaves and covered with a little soil, placing the bell-glass on each root in a square systematic manner, covering them with mats or litter, as the gardener chooses. They, moreover, do excellent service in forwarding and keeping up a succession of Melons when grown on hotbeds. When arrived at a certain stage of maturity the lights are taken off, and by placing these bell-glasses over a few of the fruit, they hurry them on to maturity, while the others exposed to the open air are retarded. They may be applied in many other ways, but the principal and greatest use they are put to by the French gardener is their great adaptability to producing fine crisp white Cos Lettuces. No gardens in France are considered perfect without a few hundreds of these bell-glasses;

and in large gardens, where many people have to be supplied the whole year through with good Lettuces, a thousand of them would not be considered too many. At the Jardin Imperial de Versailles some ten thousand of them are in use, and many a Paris market-gardener uses twice as many. In fact, many of them may be seen within and without the fortifications of Paris. Thousands of them are used in the propagation of hardy Rhododendrons, Hollies, and every description of nursery stock. Hundreds of thousands of *Ficus elastica* and of *Dracænas* are struck, and millions of seedlings are raised, under them. In short, go where you will, you see these bell-glasses in every garden, rich and poor. The *ouvrier* must have his twelve, the *rentier* his fifty, the *propriétaire* his hundred or thousand, and the *Empereur* his ten thousand; and, according to the extent of their trade, the market-gardeners must have their acres covered with this useful implement. H. KNIGHT.

(To be continued.)



ECCLENVALE APPLE.

THIS is an Apple I have never seen recommended, or even rarely seen included in trade-lists—why, I do not know, as to my mind it deserves a place in every collection. It is one of those sorts which I think should be planted by the half-dozen. It is a kitchen Apple of very large size—often 4 inches in diameter—of a beautiful pale yellow colour, smooth and shining, very round and regular in outline, consequently there is no waste in paring. It is something after the style of Stirling Castle Apple, but much larger, and equally prolific. We value the Ecclevale especially as the tree is very hardy, and a strong grower on a cold and unkindly soil; and, moreover, bears in abundance its large handsome “fill-basket” Apples. It keeps quite as well as the well-known Keswick Codlin. We have a lot now in good condition in the middle of December, and they look like keeping some time longer. It seems a pity such a beautiful Apple is not fit for dessert, although it sometimes finds its way thither as a sensation dish.

For exhibition in a collection of cooking Apples it would certainly tell. If my memory serves me right, it, or one exceedingly like it, figured in the magnificent first-prize collection exhibited by Mr Cramb, Tortworth Court, at the International Show in Edinburgh, 1865. It is not described in Hogg's ‘Fruit Manual,’ but mine is not the latest edition.

THE SQUIRE'S GARDENER.

STRAWBERRIES IN NOVEMBER.

It is a well-known fact to all gardeners who force Strawberries, that those planted out in the open ground, after having undergone the process of forcing, invariably show flower and fruit again in the autumn, after having picked up their energies in the open ground; and if the autumn is favourable, dishes of good Strawberries can be gathered in September and October. Acting on this suggestion, we on one occasion potted out fifty plants in April, out of 6-inch into 9-inch pots, and grew them the hottest part of the summer behind a wall alongside of Cinerarias, and were rewarded with a few dishes of fruit in October, from under the protection of a cold frame; but the trial not having been so satisfactory as to compensate for the labour, we did not repeat the experiment, although the feat created a sensation at the dinner-table at the time, and was the occasion of a few little compliments to our dexterity. We have also had Strawberries very early, or rather very late—that is to say, in midwinter—by potting in spring those runners made late in the open ground the previous summer, and growing them on in the usual way; they showed flower in the open air in October and early part of November, and were in fruit under glass in January and February, but this not on any great scale. It however shows what might be accomplished by getting out of the old groove, and by careful perseverance. We have been led into these remarks by a letter from a very clever and enthusiastic Yorkshire gardener, Mr H. W. Axton, Pepper Hall, in which he narrates how he has been able to have ripe Strawberries since September until now (December 6) in quantity.

Mr Axton says that Keen's Seedling is the sort he has used this year. The plants from which he is now gathering fruit were put into heat about this time last year, in 4-inch pots, and after having fruited were shifted into 6-inch pots in the month of May, and plunged in coal-ashes through the summer in a southward situation; giving them plenty of water, and sometimes a little liquid manure, they in the month of September throw up fine trusses, when he removes them near the glass in a cool house, with plenty of air night and day, and hastens them on as wanted. The first year he tried them he picked off the blooms, thinking they would be too early; but they did not flower again until spring, consequently he missed his object. We happen to know that Mr Axton has had those Strawberries in plenty, and that they have been excellent. Now, after all, there may not be anything very new in all this, but why is the plan not oftener put in practice? We are determined to try again next year with more care, and with a

decided aim at a successful issue, under the stimulus of our friend's example and success. It is clear Strawberries may be had very late by this system—in fact, “all the year round.” They can, however, be sent to table as a companion dish to the autumn Raspberries, a dish of which we sent in as late as the second week in November, even in this inclement season—from under a south wall, however.

THE SQUIRE'S GARDENER.



THE FLOWER-GARDEN.

No. XIII.

HARDY HERBACEOUS PERENNIAL PLANTS.

HERBACEOUS perennials are a class of plants distinct in their nature from annuals and biennials, inasmuch as they live for an indefinite number of years ; and differ from shrubby plants in the limited and less woody nature of their growth, and in dying down to the ground every year after they have flowered, and their leaves and stems have performed the functions necessary to their future wellbeing. They are a very extensive class, but, with comparatively few exceptions, not so well adapted for a continuous and artistic effect for grouping, according to the reigning fashion in geometrical flower-gardens, as their more tender rivals now popularly known as bedding plants. They are, nevertheless, a most interesting class, and individually many of them are exquisitely beautiful ; and one feature in their character—namely, their hardiness—makes them available where the more fashionable plants cannot, for various reasons, take their place. It may perhaps be considered a little digressive here to refer to one loss which the young gardeners of the present day have sustained to a large extent in the exclusion of hardy perennials from the prominent position they occupied in the days of their predecessors. That loss consists in the study and observation which were absolutely necessary in order to their becoming acquainted with the various genera and species of these border plants. We shall never forget the interest with which, in common with many young men, we studied, dried, and classified, from the fine collection at Bothwell Castle especially, and at other gardens besides.

It is with the view of assisting those of my readers who have no glass by means of which to grow the tender and half-hardy plants already treated of, and who do not feel disposed to purchase them, to

see that there is no reason why they should not have very interesting flower-borders by growing hardy perennials in conjunction with hardy annuals, neither of which calls for a single pane of glass in order to cultivate them well. Indeed, even to the most wealthy who reside at their country-seats in spring and early summer, hardy perennials that bloom from January and February till the middle of June are indispensable auxiliaries if outdoor flowers in variety are to be enjoyed at all. This applies with still more force to business men who reside in the outskirts of large towns, and who are proverbially fond of gardening, for relaxation as well as for its own sake.

While we venture to suppose that these remarks will commend themselves to all who have to deal with the requirements named, we cannot endorse a good deal that has of late been advanced condemnatory of the very effective but more tender plants, the culture and arrangement of which form the chief object of these papers. But as this has already been referred to, we desire not to say anything more here than that, while both descriptions of plants are recommended, we do not for a moment wish it to be understood that to make autumn flower-gardens gay with flowers is a point to be accomplished in the highest degree without patronising very largely the half-hardy and tender plants already treated of. The whole question, as to when or where perennials should be in the ascendant, and *vice versa*, must depend on the season when flowers are required. If that season be spring and early summer, then half-hardy and tender plants are of necessity excluded; but if in summer and autumn—more especially for all geometrical designs—these will be placed in the ascendancy. Their habit of continuous blooming, and more compact and manageable growth, at once distinguish them for this particular season. The two classes should not be looked upon altogether as rivals, but as relieving parties—the one to be on service while the other is reposing.

Spring flower-gardening on the grouping system shall be treated of by-and-by: the object here is to recommend and treat briefly of a selection of hardy plants that bloom in early spring, and onwards till autumn; and for which, as a whole, the mixed border must be looked on as the most appropriate place; and where, with a mixture of annuals and other plants, an interesting succession of flowers can be kept up for a long time.

Culture.—The great majority of the plants enumerated in the accompanying list thrive well in ordinary garden soil. A deep sandy loam embraces the wants, in this particular, of the greatest part of the most showy herbaceous and bulbous plants. In preparing a border for a fresh plantation, it should be well manured, deeply trenched if the staple allow of it, and thoroughly pulverised. Previous to plant-

ing, a good dressing of leaf-mould, forked in and mixed with the top spit, will be of great service. In soils that are tenacious and wet, thorough-drainage is of the first importance. Road-grit, or finely-sifted mortar-rubbish or burned soil, mixed in with such soil, is very beneficial mechanically; and these plants, generally speaking, thrive well with such. Light hot sandy soil calls for contrary treatment, and a dressing of good-holding loam will greatly improve it. Depth of soil is of great importance in the culture of the majority of herbaceous plants. If shallow, and lying on a hard subsoil, their bloom will be comparatively poor and short-lived, especially in dry seasons and localities.

Tuberous and bulbous rooted plants are best planted in autumn. Although, with careful management, such things as Narcissus, Crocus, Snowdrops, &c., can be moved and planted, even when in bloom, successfully, it is nevertheless desirable to plant all such in autumn before they begin their growth upwards, so that plenty of time is allowed for them to make roots, and so insure a good growth and bloom in spring. The fibrous-rooted plants are generally so hardy that they can be transplanted and do well any time, when the weather is mild and the ground in working condition, after they ripen their summer growth, till they begin to grow for another year. In the case of the more weakly rooted and growing sorts, the spring—just as they are beginning to grow—is the safest time to remove and plant them. But large-growing strong-rooting things—such as Phloxes, Delphiniums, Asters, Potentillas, &c.—can be moved with impunity any time after they are cut down in autumn.

Where a whole season's bloom has to be provided for, the best way is to plant the early and later flowering sorts time about. Planting first a spring-flowering plant, then a summer flowerer, and then an autumn-blooming plant—thus mixing them as regularly as their heights and colours will allow—provides against there being extensive blanks at any given time of the season; and with the aid of annuals and half-hardy plants and bulbs, the gaps caused by the fading of the early-flowering sorts can be made up as they occur, by planting or sowing close to the early perennials before they go out of bloom. By the liberal use of hardy flowering bulbs—such as Crocus, Snowdrops, Tulips, &c., which can be removed with balls and laid in reserve to ripen, so making way for summer-flowering things—an almost incessant bloom can be maintained in mixed borders. All plants introduced into such borders for successional blooming should have the ground prepared for them by mixing in some well-rotted manure with the soil both under and around their roots. This applies to bulbs—such as Hyacinths, Tulips, &c.—with equal force. If not convenient to care-

fully remove bulbous plants as they go out of flower, their foliage should not be cut away before it ripens ; it may be pushed aside for the time, and the successor planted close to it. If left thus in the border, each patch should be marked with a piece of neat stake or label, so that it be not destroyed or interfered with by mistake. Indeed, many or most hardy bulbs are best left undisturbed for several years, for they bloom more strongly and increase better than when often disturbed.

The various colours afforded by the Hepatica, the Primrose, and other early-flowering plants treated of distinctly for spring grouping, are very beautiful, and they bear removal from mixed borders if convenient to do so ; and their places can be taken in mixed borders by autumn-sown annuals, and such continuous bloomers as Stocks, Daisies, Pansies, &c. And all who can winter a few large plants of Scarlet Geraniums, and many other half-hardy things, will find that their brilliant hues lend a brightness to mixed borders which cannot well be had without them. The many things in the way of bulbous-rooted plants—such as Tulips, Hyacinths, and Narcissus, &c., which can be bought at a cheap rate—are also available by those who, either from choice or necessity, are restricted to a mixed border. They can be potted in small pots in autumn by almost every one who possesses a garden, for they only require some light rich soil, and plunging in any snug corner, covered over with a few inches of light soil and loose litter to protect from frost. Here they can remain till such early flowers as Snowdrops and Aconites are passed ; then they can be planted as directed, either close to these early plants, or in their place, to bloom for a while, to be in their turn succeeded by tender subjects.

Very generally perennial plants are allowed to remain undisturbed in the same border and soil for many years in succession, receiving no further treatment than being dug amongst annually, with an occasional dressing of manure. It would be much better for them if they were lifted out of the border at intervals of a few years, and carefully laid in till the border was trenched and well manured, and, where practicable, a portion of fresh maiden soil substituted for a portion of the old. Strong sorts in the course of years rob the weaker feeders of nourishment, and require curtailing biennially at least to keep them within bounds.

The following lists comprise selections of the more common and easily cultivated showy sorts. I have resisted the temptation to make long lists of many that personally I am very partial to, but instead have studied the useful and most suitable for mixed borders in moderate-sized places :—

SELECT LIST OF HARDY HERBACEOUS PLANTS.

- Aubrietia grandiflora*, purple, $\frac{3}{4}$ ft.; April, June.
- Adonis vernalis*, yellow, 1 ft.; March and April.
- * *Alyssum saxatile*, yellow, $\frac{3}{4}$ ft.; April, May.
- Alyssum saxatile foliis variegatis*, yellow, $\frac{3}{4}$ ft.; April, May.
- Anemone Apennina*, blue, $\frac{3}{4}$ ft.; March, April.
- Anemone fulgens*, 1 ft.; June, July.
- * *Anemone coronaria*, various, $\frac{3}{4}$ ft.; March, May.
- * *Anemone japonica*, white, 2 ft.; September.
- Anemone Pavonia*, crimson, 1 ft.; April, May.
- Anemone sylvestris*, white, $1\frac{1}{2}$ ft.; April, May.
- * *Aquilegia alpina*, blue and white, 1 ft.; May, July.
- Aquilegia Skinnerii*, scarlet and green, $1\frac{1}{4}$ ft.; April, June.
- * *Arabis albidia*, white, $\frac{3}{4}$ ft.; February, May.
- * *Arabis lucida variegata*, white, $\frac{3}{4}$ ft.; April, May.
- * *Achillea millefolium roseum*, red, 2 ft.; June, July.
- * *Achillea Eupatorium*, yellow, 3 ft.; June, July.
- Achillea aurea*, yellow, 1 ft.; June, July.
- Achillea ptarmica flore pleno*, white, $1\frac{1}{4}$ ft.; June, August.
- Antennaria margaritacea*, yellow and white, $1\frac{1}{4}$ ft.; July, September.
- Anthericum liliastrum*, white, 1 ft.; June, July.
- Aster amellus*, purple, 2 ft.; August, September.
- * *Aster elegans*, white, 3 ft.; September, October.
- Aster ericoides*, white, 3 ft.; September, October.
- Aster Bessarabicus*, violet, 2 ft.; September, October.
- Aster laevis*, blue, 2 ft.; September, October.
- Aster Novæ Angliæ*, purple, $3\frac{1}{4}$ ft.; September, October.
- * *Aster versicolor*, white and pink, 1 ft.; September, October.
- Armeria cephalotes*, blue, 2 ft.; June, July.
- * *Baptisia Australis*, blue, 3 ft.; June, July.
- * *Coronilla varia*, pink, 1 ft.; June, July.
- Cardamine pratense flore pleno*, white, $\frac{3}{4}$ ft.; March, April.
- * *Campanula carpatica*, blue and white, 1 ft.; June to August.
- Campanula grandis*, blue, 2 ft.; June to August.
- Campanula macrantha*, blue, 3 ft.; June to August.
- * *Campanula persicifolia* (varieties), blue, $2\frac{1}{4}$ ft.; June to August.
- * *Campanula rotundifolia*, blue, 2 ft.; April, May.
- Calimeris diplopappus*, 3 ft.
- * *Centranthus ruber*, red, 2 ft.; June, July.
- Cheiranthus Cheiri* (double and single), various, 1 to 2 ft.; March, June.
- Cheiranthus Marshallii*, yellow, $\frac{3}{4}$ ft.; April, June.
- * *Cheiranthus alpinus*, yellow, 1 ft.; April, June.
- Caltha palustris pleno*, yellow, 1 ft.; June, July.
- Chelone barbata*, scarlet, $2\frac{1}{4}$ ft.; June, September.
- Convallaria majalus*, white, $\frac{3}{4}$ ft.; April, May.
- Corydalis lutea*, yellow, 1 to $1\frac{1}{4}$ ft.; May, July.
- Chrysanthemum articum*, white, $\frac{3}{4}$ ft.; August, September.
- * *Delphinium* (in varieties), various, 3 to 4 ft.; June to August.
- * *Dielytra spectabilis*, rose and yellow, $2\frac{1}{4}$ ft.; April, June.
- Dictamnus fraxinella*, purple, 2 ft.; June, July.
- * *Dodecatheon media*, purple and lilac, 1 ft.; April, June.
- * *Dodecatheon elegans*, purple and white, 1 ft.; April, June.
- Dracocephalum alpinum*, yellow, $\frac{3}{4}$ ft.; April, May.
- Epimedium pinnatum elegans*, yellow, 1 ft.; March, April.
- Erigeron speciosus*, blue, 2 ft.; June, July.
- Echinops Ritro*, blue, $1\frac{1}{4}$ ft.; June, July.
- * *Eryngium alpinum*, blue, 2 ft.; July, August.
- Eryngium amethystinum*, blue, $2\frac{1}{4}$ ft.; June, July.
- * *Fritillaria imperialis*, various, 3 ft.; March, April.
- * *Fritillaria meleagris*, various, $1\frac{1}{4}$ ft.; March, April.
- Fritillaria præcox*, white, 1 ft.; April.
- * *Geum coccineum*, scarlet, $1\frac{1}{4}$ ft.; June, July.

- Geum chilense*, scarlet, 2 ft.; June, July.
- * *Galega officinalis*, blue, 2½ ft.; June, July.
- * *Gentiana asclepiadea*, blue, 1 ft.; July, August.
- * *Hesperis matronalis*, purple and white, 2 ft.; June to September.
- Helleborus niger*, pink, ¾ ft.; January, March.
- Hemerocallis flava*, yellow, 2 ft.; June.
- Hedysarum obscurum*, rosy purple, ¾ ft.; May, June.
- * *Iberis sempervirens*, white, ¾ ft.; March, May.
- * *Iberis Gibraltica*, white, 1 ft.; March, May.
- * *Iris anæna*, blue, 2 ft.; June.
- * *Iris Florentina*, white, 2 ft.; June.
- * *Iris flavescens*, yellow, 3 ft.; June.
- * *Iris Germanica* (in variety), blue, 2 ft.; May, June.
- * *Iris pallida*, blue, 2 ft.; May, June.
- Iris pumila* (in variety), purple, ¾ ft.; April, May.
- Iris ochroleuca*, purple, 3 ft.; April, May.
- Iris Jacquesiana*, dark-coloured, 2 ft.; April, May.
- Iris subiflora*, violet, 2 ft.; June.
- * *Iris variegata*, striped, 2 ft.; May, June.
- Lilium colchicum*, lemon, 4 ft.; June, July.
- * *Lilium excelsum*, cream, 4 ft.; June, July.
- * *Lilium longiflorum*, white, 2 ft.; June, July.
- * *Lilium chalcidonicum*, scarlet, 3 ft.; June, July.
- * *Lathyrus roseus superbus*, red, 2 ft.; July, August.
- * *Lathyrus grandiflorus*, purple, 4 ft.; June, July.
- * *Lathyrus latifolius*, pink, 4 ft.
- * *Lupinus polyphyllus*, blue, 3 ft.; June.
- Linum flavum*, yellow, 1 ft.; June.
- Monarda didyma*, red, 2 ft.; June, July.
- Monarda purpurea*, reddish purple, 2 ft.; June, July.
- Liatris scariosa*, purple, 3 ft.; September, October.
- * *Narcissus poeticus*, white, 1 ft.; March, May.
- * *Narcissus odoratus*, yellow, 1 ft.; March, May.
- * *Narcissus major*, and varieties, yellow, 1½ ft.; March, May.
- * *Orobus vernus*, purple, 1 ft.; March, May.
- Orobis Lathyroides*, 2½ ft.
- Ornithogalum umbellatum*, white, ¾ ft.; April.
- Pyrethrum uliginosum*, white, 3 ft.; May, June.
- * *Pyrethrum roseum* (single and double in variety), various, 2 ft.; June.
- * *Pæonia* (in variety), various, 2 ft.; June, July.
- * *Phlox* (in variety), various, 2 to 4 ft.; June to September.
- Papaver nudicaule*, yellow, 1 ft.; April, June.
- Papaver orientale*, red, 2 ft.; June, July.
- * *Potentilla* (in variety), various, 1 to 2 ft.; June, July.
- Pentstemon procerus*, blue, 1 ft.; June, July.
- * *Pentstemon gentianoides*, various, 1 to 2 ft.; June to August.
- Polygonum Sieboldii* (in variety), white, 3 ft.; June, July.
- Phlomis pungens*, purple, 2 ft.; June, July.
- Physostegia virginiana*, red, 2½ ft.; June, July.
- Polemium ceruleum*, blue, 1½ ft.; June, July.
- Ranunculus acris pleno*, yellow, 1½ ft.; June, July.
- * *Statice latifolia*, blue, 2½ ft.; June, August.
- Spiræa filipendula pleno*, white, 1½ ft.; June to August.
- Spiræa venusta*, rose, 2½ ft.; July, August.
- Spiræa japonica*, white, 2 ft.; July, August.
- Stenactis aruncus*, white, 3 to 4 ft.; July, August.
- Stenactis speciosa*, purple, 2 ft.; July to October.
- Symphytum Caucasicum*, blue, 1½ ft.; June, July.
- Saponaria ocymoides*, red, ¾ ft.; June, July.
- Stipa pinnata*, a grass, 1 ft.; June, July.
- Tritoma uvaria glaucescens*, red and orange, 3 ft.; August, October.
- Tritoma grandis*, red and orange, 5 ft.; October to January.
- Trollius Asiaticus*, orange, 1 ft.; May, June.
- Trollius nepellifolius*, yellow, 1½ ft.; May, June.
- Trollius Europæus*, yellow, 1½ ft.; May, June.

Thermopsis fabacea, yellow, 2 ft. ; June, July.	Veronica teucrium, light blue, 2 ft. ; June to August.
Tradescantia virginica, various, 2 ft. ; May, June.	Veronica corymbosa, blue, 1½ ft. ; June to August.
Veronica gentianoides, blue, 2 ft. ; May, June.	Veronica amethystina, blue, 2 ft. ; June to August.

This list might be considerably extended, and many other interesting plants added to it, but we have aimed at compiling such a selection as are most showy border flowers, and that thrive well in ordinary garden soils. Some of those that shall be treated of and recommended for spring beds, as well as the beautiful hardy bulbs recommended for the same purpose, are not included here.

Those marked * are most desirable for a small selection, and are very beautiful plants—especially well worth the attention of amateurs who can devote a border to them ; and the lovely hardy spring bulbs, which, used together as has been described, keep up a long succession of bloom as a mixed border.



NEW CHRYSANTHEMUMS.

MR JOHN SALTER'S winter garden of Chrysanthemums at Hammer-smith has now come to be regarded as an annual horticultural institution of no common order. If any one wishes to see Chrysanthemums in the form in which they are usually grown for exhibition—massive, symmetrical, and superbly incurved—a visit should be paid to Mr Salter about the end of November, when his specimens are in the full flush of their beauty. They are arranged in banks, so that a full view of each flower can be obtained ; and, to lend a finish to the appearance of the whole, ornamental foliaged and flowering plants are introduced, in the form of edgings, small circular beds, &c., in a very pleasing and effective manner.

I went in search of novelties—for to keep these before the public is one of the functions of our horticultural literature—and I was enabled to see Mr Salter's new flowers at their best. I made a note of the following as worthy of attention : Volunteer, a very novel flower of a rosy-violet and bronze hue ; a very fine incurved flower : Guernsey Nuggett, an extra fine yellow flower of a bright canary hue, fully incurved : Mr Cullingford, violet purple, suffused with rose, the hue bright and distinct—a fine incurved flower : Princess of Teck, a large and full incurved flower, pure white in colour : Lord Derby, dark purplish rose, finely incurved : Cultivation, deep violet carmine ; a handsome reflexed flower, with broad stout petals : Baron Beust, a fine

incurved flower that opens yellow, but changes to maroon rose ; very fine ; Miss Marechaux, pure white, full substance, petals of great breadth : Enamel, delicate flesh, a pure enamel in colour ; a fine reflexed flower : Lilac Beverly, a sport from the Golden Beverly, which is tinted with lilac ; a very pretty and attractive flower : Bronze Jardin des Plantes, a bronzy sport from this favourite yellow kind ; Princess Beatrice, bright pale lilac, an incurved flower, full and of fine quality ; and Rival Aimée Ferrière, a form of the old Aimée Ferrière, but with a darker and consequently showier tip. The foregoing batch of new kinds can be accepted as forming a very fine set of new Chrysanthemums, especially as they include what is much needed in this favourite autumnal flower—a considerable amount of novelty of colour.

It would appear that neither the Pompone nor the Anemone flowered classes receive any new additions this season ; but the loss here (if any) is amply compensated for in the new race of Japanese Chrysanthemums, which have produced a large quantity of new forms from seeds. These are altogether without the range of the artificial but necessary barrier of properties created by the florist, such as form and substance, smoothness and colour, and the other divisions implied in his general principle of quality. In fact, they may be said to set these laws utterly at defiance. Their value actually lies in the fact that they are without the range of the florist's laws ; and the flowers farthest removed from their application are some of the most striking and attractive of the new Japanese kinds. They are also of value, because they are both early and late in blooming, some coming into flower by the beginning of October, others not till January ; and thus an unusual succession of one particular flower is thereby secured. At this season of the year they will be invaluable in the conservatory for decorative purposes. They appear to be quite as hardy as the ordinary form of the Chrysanthemum, but, like that form, should be grown under glass to do them justice ; indeed, it is the only condition of blooming the late-flowering kinds.

The 'Gardeners' Chronicle' says of this new race : "There are four types observable, which may be distinguished as the echinate or porcupine-flowered ; the radiate-flowered ; the actinoid or thread-flowered ; and the flat or ribbon-flowered. To the first of these may be referred Gold-thread, a free-blooming sort, that opens early, and keeps for a long period in bloom ; in this the florets form stiff slender quills, which are a little incurved and pointed at the tips, and are yellow, taking on a purplish tinge at the circumference of the bloom. To the second belongs Tarantula, a most singular spider-like flower, with a close button-like disc, and a spreading row of a single series of

long, straight, slender, tubular florets. The actinoid or thread-flowered varieties are, so far as can be seen at present, the most novel and ornamental. They are numerous, of varied colours, and have the florets rolled longitudinally into a long subulate or thread-like form, at length twisting and falling about in a confused manner, but forming loose elegant tassels, quite unlike the blooms of ordinary *Chrysanthemums*. The ribbon-flowered group consists of varieties with long, broad, flat, but pointed florets, which fall about in various directions, sometimes assuming a kind of spiral form, and in many instances, probably in all, forming large showy blooms."

The thread-flowered varieties are largely represented : some of the most distinct are Wizard, deep chestnut red, with showy yellow eye ; Red Dragon, reddish chestnut, the flower opening quite dark in colour, but the inside of the florets becomes orange yellow as the bloom becomes older ; Comet, orange, passing to bright chestnut red ; Leopard, reddish orange, spotted with yellow, distinct and novel in character ; Nagasaki Violet, bright, clear, rosy violet, changing to a paler hue, and spotted with white ; and the Mikado, clear bright yellow. Of the ribbon-flowered kinds, the following represent the most distinct : The Daimio, pale rosy lilac ; Aurantium, showing orange yellow, two of the very best ; also Jeddo Lilac, pale rosy lilac ; Sulphureum, sulphur-white, which sometimes comes spotted with rose ; Red Indian, Indian red, bold and showy ; and Prince Satsuma, pale golden orange, also showy in appearance.

A singular thing about this new race of *Chrysanthemums* is, that the seed saved from any one or two varieties will sport in a singular manner, producing diversity of colour and shape, apparently without reference to the hue or formation of the immediate progenitor. Once obtain the blood, says Mr Fortune, and the multiplication of varieties will commence with the first generation.

The old and useful habit of giving a selection of the best varieties of the *Chrysanthemum* must not be omitted on this occasion. I noted the following large-flowering kinds. as being well worthy of cultivation :—

Ossian, rose, finely incurved.
Princess of Wales, pearl white, tinted with rosy lilac, extra fine.
Purpurea elegans, a fine and showy reflexed flower, of a bright purplish crimson hue.
Mrs Heale, like Princess of Wales in build, but pure white, extra fine.
William Edward, canary yellow, finely incurved, late in blooming.

Countess of Warwick, sulphur white, a large and fine flower.
Lady Carey, rosy lilac, large and full, a late-blooming kind.
Ali Baba, red, tinged with gold, large and fine.
Mrs Kaines, clear blush, a large and beautiful flower.
Hercules, reddish carmine, large and bold, finely incurved.

Mrs G. Rundle, a medium-sized but compact, pure white flower, quality very fine.	Doctor Sharpe, a handsome reflexed flower of a bright chestnut-crimson hue.
Dr Lindley, dark orange, with amber centre, large and full.	Yolande, creamy white, tinged with lilac, broad incurved petals, fine.
Fingal, bright rosy lilac, very fine.	Mr Wyness, violet pure, a pretty shade of colour, flower finely incurved.
Lady Talfourd, delicate rosy lilac, tinged with silver, a fine pot plant.	Sylvia, rosy lilac, tinged with silver, a fine and compact flower.
Prospero, dark violet purple, a fine incurved flower.	Prince Alfred, rosy crimson, a splendid flower.
Cadic's Perfection, bright red, tinted with orange, large and full.	Prince of Wales, dark purplish violet, very fine and full.
Alma, bright rosy crimson, a fine and showy reflexed flower.	Rev. J. Dix, orange red, with pale centre, very full and handsome.
L'Emir, pale reddish crimson, a fine but late-blooming variety.	

These represent the finest flowers, and should a list of suitable exhibition kind be required, the foregoing will supply it—of flowers of the most reliable character.

R. D.



NEW PLANTS OF THE PAST MONTH.

FOREMOST among these must be placed these curious and certainly most interesting forms of the new race of seedlings, Japanese Chrysanthemums, shown by Mr John Salter, Versailles Nursery, Hammer-smith, London. At the last meeting of the Royal Horticultural Society Mr Salter exhibited eight blooming plants—seedlings from the original forms, sent home by Mr Robert Fortune from Japan a few years ago, and which were exhibited by Mr Standish the year after. Their value will lie in their great value as decorative plants for conservatory work; and also in their importance as hybridising agents. The flowers generally have such fantastic and curious forms that they set at defiance all attempts to classify them with the ordinary forms of the Chrysanthemum. They are only a few out of a large number blooming with Mr Salter; and, as a rule, they may be said to bloom later than any of the kinds well known to us. First-class certificates have been awarded (solely as decorative plants) to Red Dragon, cinnamon red, tipped with orange; Aurantia, clear gold, with broad petals, somewhat incurved like a large flowering kind; Comet, gold and orange buff, with curious thread-like florets; and the Wizard, dark reddish cinnamon. The others were Purpurea punctata, violet rose and pale flesh; the Daimio, silken rosy pink; Tarantula,

yellowish thread-like florets, projecting in a double row from a curious quilled lemon centre ; and Nagasaki, violet, bright purplish crimson. The new race of *Chrysanthemums* is so interesting that they must have a separate and more extended notice.

Whether it be wise or no to name variations from the first introduced flowers of *Odontoglossum Alexandræ* is a question open for discussion, seeing that with every new importation may come new forms of variation. A very beautiful variety has been shown by Mr Green, gardener to W. Wilson Saunders, Esq., named *Bowmannii*, having a spike of five fully expanded flowers handsomely spotted with bright lilac rose. It well deserved the first-class certificate awarded to it.

Mr Jennings of Shipston-on-Stour has a handsome variegated form of *Cupressus macrocarpa* : unfortunately its value is diminished from the fact that it is not a hardy species, as *C. macrocarpa* has been cut down in some instances twice during the past seven years. It will form a handsome conservatory plant. Some dwarf-growing forms of a *Thuja*, said to be seedlings from *T. falcata*, have been shown by Mr Kinghorn ; but they will be shown again in order to get their identity made clearer.

Mr Salter has also some handsome red and crimson stalked forms of Chilian Beet (*Beta Chiliensis* or *cycla*), said to be a red variety of the Seakale Beet. They are extremely handsome just now, growing in pots in Mr Salter's winter garden : whether they can be employed for out-door purposes remains to be seen. Out of a batch of seedling silvery-leaved *Cinerarias*, Mr Salter has obtained some very promising things, one or two of which bids fair to become very useful. One has the form of the Fern-leaved *Primula*, and it is to be shown again when propagated, to prove if its character can be maintained.

Some cut blooms of the handsome and showy *Scutellaria costaricana* have been shown by Mr R. Parker. It was introduced from Costa Rica by Mr Wendland a few years ago, and bloomed first in June 1863. The rich orange-scarlet flowers are of a very brilliant hue, and the specimens seen were cut from plants that had bloomed in a cold pit with scarlet *Pelargoniums*.

Messrs F. & A. Smith of Dulwich are laudably persistent in their efforts to show how valuable the variegated *Zonale Pelargoniums* are at this season of the year for decorative purposes, and at every opportunity they show a batch of bright-looking plants that are singularly effective. It should be stated that these plants are from a house devoted exclusively to their culture, and therefore should not be taken as indicating what they would be in a house of mixed plants.

Chrysanthemums have bloomed so late generally this season that but

little opportunity has offered for sowing new kinds ; but the following have put in appearance, and been awarded first-class certificates :—Beauty of St John's Wood (E. G. Henderson & Son), a very fine creamy white sport from Princess of Wales, the flower full and finely incurved, but preserving so much of the rose colour of its progenitor as to have a ring of this shade round the base of the flower ; Mrs Sharpe (Forsyth), a full and finely incurved flower, colour rosy lilac with a light centre, fine shape ; and Princess Beatrice (Salter), of a bright pale lilac shade, a showy-looking and bold and full incurved flower. Mr Salter has some others that shall be noticed under another heading.



CULTURE OF THE CHRYSANTHEMUM.

(Continued.)

WHEN all the varieties of which it is desired to grow specimens have been procured, and the cuttings or suckers well rooted, about the second or third week in February select the strongest and most healthy plants of each sort, and give them a shift from the thumb-pots in which they have been struck into 3-inch pots, using turfy loam and leaf-soil in equal proportions, with a sprinkling of river or silver sand. Use clean and dry pots, and, if not already done, they should be stopped by carefully taking out the crowns of those intended for dwarf plants, but not for standards or pyramids—by reference to the November number full details will be found. This will also be the best opportunity to rub off the laterals and eyes for an inch round the stem of the young plants just above the soil ; this should be done in order that it may be clearly seen afterwards that the plant has been “grown on one stem,” especially if the plants are intended for exhibition purposes, for the London and provincial societies have all a rule to that effect. If the laterals or eyes are not rubbed off, the shoots from them are sure to root in the pot, as will the upper branches when tied down to the rim in training ; but this may be easily avoided by placing small pieces of slate under the branches, taking care that they are not removed in watering, &c. When potted, the best place for the young plants is a cold frame, the pots being plunged in ashes, or a cold greenhouse close to the glass. If the frame is used, the outsides will require a lining of straw to prevent the severe weather so frequent in February injuring its contents ; if placed in a greenhouse, great care must be taken to give plenty of air, and not to keep them too warm,

a mistake which many, especially amateurs and beginners, in their zeal and desire to push on, are apt to commit. The cool system cannot be too clearly impressed on all cultivators, as it is the only one which will produce stout stubby healthy plants with plenty of roots, ready to grow vigorously when spring starts them off on the race of plant life. Weakly-grown plants of a pale sickly green are the sure result of a close atmosphere, and no after-culture can make them equal to those grown in the cool.

Having thus traced the growth of our favourite plant for the coming two months, it will now be judicious to consider the soil required for the two last pottings, which generally take place about the beginning of May and the first week in June.

The Chrysanthemum will grow in nearly any kind of soil, and in almost any locality; but to enable the cultivator to grow it to that perfection which he desires, its habits and demands, both of soil and locality, must be studiously consulted. Gardeners on these points seldom agree, some mixing their composts almost as carefully as a chemist would his drugs, whilst others pot them in anything that comes to hand. The compost I have used for the past four years has been one-half loam, one-quarter leaf-soil, and the remaining fourth sheep-manure. To make it sandy and friable, I put, just before potting, some lime-rubbish—as old as I can procure it; this helps to keep the roots warm in October and the beginning of November, when the plants are coming in bloom. When the compost is prepared it should be put into a heap, so that the frost can have free scope to sweeten and disintegrate it, and during the spring it should be turned over several times. Many gardeners prefer a lighter soil than this mixture, but I never found it to answer so well, the light compost being deficient in loam, which affords lasting strength and sustenance to the plants, and holds to the roots much longer than lighter materials. The soils used previous to final pottings may be much lighter—say, one-third loam, one-third leaf-soil, and the remainder sand and manure.

The following list contains the very finest incurved varieties adapted for culture, where cut blooms are required. From now to the end of February is the best time for their propagation, the cuttings being made exactly as for specimens, care being taken not to stop or damage the crowns:—

Abbé Passaglia, brassy amber, very broad petals.	Alfred Salter, delicate pink.
Aimée Ferrière, silver white, tipped rose pink.	Alma, rose crimson, very fine.
Alarm, violet crimson.	Annie Salter, golden yellow.
	Antonelli, salmon orange.
	Arigena, amaranth.

Beauty, peach.

Belladonna, delicate lilac.

Beverly, large ivory white, fine.

Boadicea, rose and cream.

Cassandra, white, with rosy tips.

Cherub, golden amber, with rosy tint.

Cleopatra, bluish, with rosy shade.

Dido, sulphur white, with stiff petals.

Dr Brock, reddish orange.

Duchess of Buckingham, pure white.

Florence Nightingale, pale sulphur.

General Bainbrigge, dark orange amber,
and gold centre.

General Hardinge, Indian red and gold
shade.

Golden Dr Brock, golden yellow.

General Slade, Indian red, tipped bright
orange.

Golden Trilby, clear yellow.

Gloria Mundi, very fine yellow.

Hercules, very large red carmine.

Ion, pure white.

Hereward, purple, very fine.

Jardin des Plantes, bright golden
orange.

Lady Hardinge, delicate rose pink, tip-
ped bluish.

Lady Carey, large rose lilac, with sil-
very back.

Lady Slade, delicate lilac.

Léon Leguay, lilac.

Lord Palmerston, rose amaranth, tip-
ped silvery bluish.

Miss Slade, pale sulphur.

Mr Jay, red orange.

Mrs Haliburton, sulphur white.

Mrs W. Holborn, ivory white, large.

Nil Desperandum, large dark red.

Oliver Cromwell, dark chestnut.

Pink Pearl, delicate pink, with silver
shade.

Pio Nono, Indian red and gold points.

Plutus, bright gold.

Prince Alfred, splendid rose crimson.

Prince of Wales, dark purple violet.

Princess of Wales, pearl white, deli-
cately tinted rosy lilac.

Queen of England, splendid bluish.

Rev. J. Dix, orange red, and lighter
centre.

Rifleman, dark ruby.

Robert James, vivid cinnamon and
orange.

Seraph, sulphur, with yellow centre.

Sir Stafford Carey, dark-brown chestnut,
with gold points.

Snowball, pure white.

St Patrick, ruby red.

Themis, rosy.

Trilby, bluish.

Venus, large delicate lilac peach.

Vesta, ivory white.

Virgin Queen, pure snow white.

White Queen of England, ivory white,
very fine.

THOMAS HIGNETT.

NOTES ON HARDY HERBACEOUS PLANTS.

(Continued.)

STATICE.

THE Staticeæ are a numerous family, very marked and distinct as such from allied genera, but withal—from the flower-gardener's point of view at least—rather deficient in distinctive characteristics as species. They are a genus in which the family likeness may be traced at a glance unerringly, by the merest novice in plant knowledge, from one species to another. Of course, in these Notes I am speaking more particularly of the hardy species; but the foregoing remarks apply with more or less force to all Staticeæ, whether tender or hardy, for

the greenhouse and stove sorts closely resemble in all the main features their hardy herbaceous kindred. But this circumstance need not disqualify them for patronage. We are not nowadays very exacting in the matter of distinctions and differences well defined in the plants we patronise—indeed, we may fairly be accused of a proneness to believe there is something in a name. I have no compunction, therefore, in putting forward the claims of *Statice* to a little patronage.

Statice are useful in many ways. Many of them are fond of moist situations provided they be not stagnant, and may therefore be planted alongside running streams in dressed pleasure-grounds, and on moist banks and rocks. *S. flexuosa* and *reticulata* I have seen let into the fissures of moist rocks, and do well, making, if not a covering, at least a relief to baldness. On a dry sandy bank I have seen *S. acerosa*—one of the best and most distinct of all *Statice*—luxuriant, and produce its delicate pink flowers in profusion. It is notable of this plant, that it is never dry in the most droughty weather or arid situation. The pine-like sharp-pointed leaves seem the perfection of a hygrometer, and bring down the dewdrops, if any may be found, most copiously; and the dense matted tufts of old leaves which accumulate, but never seem to decay, on the wiry creeping stems, are the best possible reservoir for the nightly store of moisture which the leaves lay hold of. This little plant is the *S. acerosa* of some catalogues, *S. Ararati* of some, while others prefer a distinct generic as well as specific name, and call it *Acantholimon glumaceum*; but, whatever the name, it should be in every garden. In cold northern places, or in situations where it would be exposed to hard frosts without any covering of snow, it should have a few spruce-branches arched over it till all danger of severe frost is past. *S. latifolia* will perhaps be considered, by all who know it, as the best of the hardy sorts for the mixed border. It is the most showy and striking of them all, and the least fastidious with regard to soil and treatment. Heavy clay soils are least favourable to its wellbeing, but abundant drainage reconciles it to even the most stubborn clay. A broad-leaved variety of the British *S. limonium* is sometimes sent out in mistake for this species, but it is decidedly inferior to it. The flowers are blue. *Statice tatarica* has pink flowers, and is rather taller than the last-named sort, but is equally well suited to introduce variety into the mixed border. *S. globulariæfolia* is a rather distinct dwarf species with white flowers, and is worthy of a place in a selection of herbaceous plants. But the same may be said of nearly every hardy *Statice*.

W. S.

HINTS FOR AMATEURS.—JANUARY.

At this season the progress of gardening operations is often arrested by the state of the weather, as ground-work cannot be carried on during frost and snow; but there is generally plenty to do in most gardens, however small, under cover. Stakes for plants may be made, either from split-laths cut into sizes, or from the straightest and best of the clippings of thorn-hedges, &c.; after making them smooth, and forming them into bundles of equal lengths, they should be tied tightly at both ends to keep them straight. The latter are excellent for supporting Pinks, Carnations, &c. Stakes for Peas can be made and packed flatly together till wanted. Cuttings of Gooseberries, Currants, Ivy, Laurels, and other plants can be made and stuck into earth, and a little litter placed over them till they can be planted. Dahlia, Ranunculus, and other roots may be examined and cleaned, removing everything in the shape of decaying matter. Seeds may be cleaned and got ready for sowing, keeping them in dry quarters. All esculent roots in store should be looked over, picking out any that are unsound. Nails taken from walls may be cleared of old shreds, and placed in a bag and well shaken to help to clear them of plaster and rust; and where there are any plant structures, they might be washed thoroughly, the plants cleared of any bad leaves, the surface of the soil scraped, and a little fresh soil dusted with sand placed over them, which will allow the water to pass freely through the whole ball of earth. All pots, either with plants in them or empty, should be washed, as nothing thrives in dirty pots. Keep all empty pots in their sizes to prevent breakage. Much may be done now to help forward work in the busy season. However, if weather permit, all outdoor work, if not already forwarded during the fine autumn, should be proceeded with as expeditiously as possible. Hedges, if any, should be closely trimmed, keeping them wider at bottom than top. Gravel, or whatever is used for walks, may be renewed, first breaking up their surfaces and cleaning them, then spreading a coating of material over, making the whole smooth and level with the back of a rake. After rain, sunken parts in roads and walks will be observed by water settling in them; they should be filled up to the level, and well rammed down.

If the ground should become dry, a second sowing of Peas may be made on a sheltered border. In damp localities it answers well to sprinkle the seed on the surface in rows, and draw the dry soil over it, forming low ridges. Broad Beans may be sown in the same way, only leaving 2 or 2½ feet between the rows, and from 2 to 3 inches between each seed. All seeds should be sown rather thickly at this season, as they grow weakly, and some are liable to perish. Many kinds of Peas

are offered for sale as "first and best" crops; but we think it well first to prove them on a small scale beside old favourites, which with us are not surpassed. Many kinds of Peas, as well as most kinds of vegetables, do well in some soils and positions, and almost fail in others. The various opinions by practical men are generally attributable to this cause. We have for several seasons tried various kinds of vegetables in different positions and soils, and have in most cases found those grown in deeply well-worked soil and sheltered from easterly winds doubly valuable to the same kinds grown on ordinary soil and exposed to all weather. Early-sown seeds, sheltered and protected from severe weather, exposing them when fine, are improved in every way; for example, the system market-gardeners in the south adopt with Radishes and young Carrots, by covering and uncovering them almost daily with dry litter. A pinch of Cauliflower, Radish, Lettuce, and Carrot seed may be sown at the end of the month in a frame if at command, and keep an abundance of air when there is no frost. All seeds, when sown early, do better when covered with fine sandy soil. Lettuce under cover must be kept dry, only giving water when compulsory—first drawing back the surface-soil, and giving the water close to the roots, and replacing the dry soil as before. Young Lettuce, Cabbage, Parsley, and other growing crops will be benefited by a coating of litter or leaf-mould placed over their roots to keep out frost. Spinach, if wanted early, may be sown among other crops, such as Cabbage, which will afford slight protection and not waste useful ground. All Broccolis coming into use must be looked over frequently and lifted under cover, or otherwise protected as formerly directed. Cabbage will also require to be looked after, as some of the small kinds are now fit for use. Suffolk Dwarf, and several other kinds for trial on a sheltered border, planted in August, are in splendid condition with us at present. We protect them with flower-pots, old beehives, or anything come-at-able. They are of great value at this season.

If hotbeds are to be made, manure, leaves, &c., should now be got ready: the material should be well mixed and turned several times, but not allowing it to decompose too much; however, some rather decayed and sweetened should be kept to place on the surface of the bed. A deep well-made bed in the beginning will give bottom-heat for ten or twelve months. Where material is scarce, forcing with manure had better be deferred; the quantity required in winter is immense, and labour is in proportion. If Mushroom beds are "showing," they had better be sprinkled with water to moisten the soil on the surface, as watering when the bed is in full bearing is liable to destroy the first crop, and a dry bed also shortens the period of bearing. Rhubarb and Seakale may be taken into heat as the demand requires.

If litter taken into the garden is unsightly, the roots can be lifted to a convenient place and placed in earth, or covered with boxes or pots in the usual way, raising the heat with fermenting material. The trimmings of Seakale roots should be kept in sand to make fresh plantations. Many are more successful with pieces of roots than seed.

If the pruning of fruit-trees and bushes, and the training of trees to walls, &c., have not been completed during the favourable weather, no opportunity should now be lost; but there is nothing gained by doing this in severe weather, as the workman cannot come half the speed or do the work so well as in genial weather. When nailing is performed, no more shreds or ties should be used further than keep the shoots straight and in their place. It is necessary to reverse each fastening as the work goes on, leaving plenty of room for the wood to develop itself in the shreds or ties, and not allowing the shoots to rest on the nails, which would soon produce canker. When small string can be used it is preferable to shreds, which are harbours for insects, and the nail has to be taken out when the shred is past use, thus injuring the wall; when ties are used the same nail often can be left for years.

If Raspberries have been cleared of the old wood and the young weakly canes, they may be tied in their place. Some prefer to tie five to seven of the best roots to a firm upright stake; others (from scarcity of stakes) plat or twist the canes, and form them into arches. They are sometimes seen bent thinly, and two lots allowed to meet and be tied by the tops to a stake. We prefer training them as is generally done with Currants, bending them a little at bottom and training them upright, keeping each cane about a foot or less apart. They are planted in rows from 1 to 2 feet from each other, and the rows are about 4 feet apart; upright stakes are used, and a rail on their tops and one along the middle makes a neat and simple support. Training of Raspberry canes has little to do with the crop compared with the treatment at their roots. When new plantations are made, cool deep soil should be selected, and enriched with plenty of decayed manure—leaf-mould and cow-dung are excellent. When the canes are planted, they may have a temporary fastening, and be allowed to stand till they begin to push their buds; they may then be cut down to within a foot of the ground, and no fruit allowed to come for the first season at least. A good annual topdressing forked over the surface of the roots helps the crop greatly, as it keeps out drought and holds moisture. We intend this season to topdress our Raspberries with a quantity of bog earth among the manure. In this soil, in some of our woods, canes of wild Rasps are to be seen growing from 8 to 10 feet high, and

producing bushels of splendid fruit. We have seen them grown in gardens in Ireland, in natural boggy earth, of larger size and greater quantity than we ever saw elsewhere. Failure is generally caused by poor hot soil in positions exposed to drought.

Watering any plants in frames or other cool structures must be done very carefully, giving only to those really in want of it, using a small-spouted pot, not to throw the water about. Most plants might almost be allowed to flag and then have plenty given to reach all the roots. Heaths or any plants growing in peat must not be allowed to become very dry or to have a damp surface kept, which would cause the plants to die at the collars. Give air on every favourable opportunity, and use fire-heat in cool structures only to keep out frost and damp. If anything should be frozen, keep shading on till the plants are thawed. Allow no bad leaves or any other decaying matter to appear. Any plants which are to give cuttings for flower-garden work may soon be introduced into warmth to give young shoots, which are more easily propagated.

M. T.



ON FLORISTS' FLOWERS.

[By one who has had a life-long practical experience in the Growth and Cultivation of most of what are termed Florists' Flowers, such as the Auricula, the Polyanthus, the Tulip, the Pink, the Carnation, and Picotee.]

THROUGH the solicitation of a few friends I am induced to give a little of my past practice and experience in these matters, which I hope will not be found uninteresting to any one, still less so to those who are about commencing the fancy, which, if I am correctly informed, seems to be reviving among florists in different parts of the country—not among the old school alone, but also among some younger hands, who seem to have a desire that way, if only properly encouraged. To these the little advice I shall give may be more interesting than to the older portion; as I well know, from past experience in my younger days, that for a young beginner to enter into the fancy headlong, as it were, without gaining some little foreknowledge of what he is about, it will be ten chances to one if he succeeds; and having seen several instances where, a person having missed his way on a first attempt, he has given up in despair rather than make a second trial. Knowing such to be a fact, I shall try to lay down a few simple rules for his guidance; and as the Auricula is the first I shall take in hand, first of all I shall start at what I consider to be, or ought to be, the first move—viz., the soil, or what may be termed compost, suitable for

the healthy growth and preservation of the plants. Sound, sweet, and wholesome soil is the only thing required to begin with, and as the sort of stuff I have prepared and made use of for over thirty years with the best of success, I cannot do better than just give it in the most simple way I can. But in the first place, I may say, I only make use of one kind of dung. Half a century ago Mr Emmerton of Burnet, near London, gave us a work on the culture of the Auricula, with which, with the exception of his different preparations of compost, I almost entirely agree, leaving out these nostrums in soils. His way of treatment of the plants through all the seasons of the year is excellent; but his preparations of soils, and the trouble and expense attending the procuring of them, I look upon it as time lost and money spent to little purpose. Goose-dung, night-soil, sugar-baker's scum, bullocks' blood, &c., after being got together and having gone through all the operations recommended, are not a whit better for the purpose than just the one plain and simple manure cow-dung, which is easily come-at-able in all parts of the country. But mind I am not in a wholesale way condemning Mr Emmerton's soils, nor do I say anything against them untried, for I did try them, and fully up to the mark as recommended in Mr Emmerton's work, from the year 1825 up to 1832, with pretty fair success. After that time I began making up a compost which, after due consideration, I persuaded myself would answer; this it did, and has done up to lately, much better than I found Mr Emmerton's to do, leaving out altogether the trouble and expense I was at during the several years I was making use of those other costly ingredients. But previous to my seeing Mr Emmerton's work at all, I had tried making up composts from first one sort of manure, then another. I tried horse-dung, as recommended by some of the Lancashire growers; I also tried night-soil, cow-dung and night-soil mixed, sheep-dung mixed partly with yellow loam and partly with black turfy loam; this latter I found to answer better than anything I had previously tried, and as well as any of Mr Emmerton's mixtures; but after all the experiments I tried, Emmerton's into the bargain, I have never in all my lifetime found one to answer so well as the plain simple cow-dung, got together and mixed up as I shall now recommend, which is two-thirds clear cow-dung, without straw or any other ingredient the cows may have as bedding. It will answer well if taken from the shed; but where it can be so managed, it is preferable taken from the field where the cows are feeding on grasses alone. About the end of May, soon after the cows are turned out to pasture, is the best, the dung then having in it more of the essence of vegetable than what is made in the shed, when the cows are feeding on drier food. But, first of all, be provided with the quantity of mould required for mixing in with

the dung, which must, in place of yellow loam, as recommended by Emmerton, be black turfy loam, such as may be found on the moors of Yorkshire and Lincolnshire, and which is more suitable to the nature and habit of the *Auricula* plant than any other kind of mould I have tried or seen tried. The best of it is to be found in gutters or hollow places on these moors; and you will get with it a certain quantity of silvery sort of sand, which is preferable to any sea or fine silver sand generally used in the south of England. But besides the little quantity of sand you have in the loam, a little more will be required of rather a coarser kind, easily got in gutters near where you get the mould. Get sufficient of the turfy loam and sand together, run it through a fineish sieve, and when brought home, get together the quantity of clear cow-dung you require; then put together two-thirds of cow-dung to one-third of your fine turfy loam and sand; chop and beat up well together in a similar manner to what bricklayers or stone-masons do their mortar for building purposes. That done, barrow it away on to an open space of ground, where it can be exposed to all weathers, frost, sun, and air. First let it lie on a heap for about six weeks, then take the spade, chop it down and turn it well over; the same chopping to be repeated once every three weeks or a month till fully sweetened and fit for use, which will be in about seventeen months. At the end of that time, for potting, put it through a half-inch sieve, not finer, as the plants thrive and prosper best in rather lumpy stuff. They don't like their roots and fibres confined in too fine close mould.

With respect to potting off, and after-treatment of the plants, I shall, all being well, come to it again on a future occasion, as well as giving a few hints on what I consider has, in a great measure, been the cause of the apathy and falling off of the cultivators of the *Auricula* as well as other florists' flowers.

J. H. L.

HUDDERSFIELD, December 1867.



SPIRAL TREES TO CULTIVATE.

THE beauties that will arise from recent introductions of the *strict* or *fastigiata* style of trees have barely yet been recognised in the superior position they are destined to occupy in the adornment of flower-gardens and refined pleasure-grounds.

Within our own remembrance only a very few varieties of spiral trees were recognised in ornamental planting. Irish Yews, the Italian

Cypress, and Junipers were chiefly used, and frequently planted so as to destroy the balance of composition ; and where we have seen such trees effective and appropriate, we not unfrequently hear them spoken of as "funereal like ;" but we have not seen an instance where the owners of well-grown specimens of the above-named varieties would consent without great reluctance to their removal, however ill placed and "funereal like." This is a strong proof that the spiral trees merit more attention than is generally bestowed on such trees out of nurseries.

The beautiful varieties now at our command by the enterprise of nurserymen comprise *naturally* the most graceful forms of the spiral tree, and in arrangement and elegance of foliage rival the most beautiful Ferns.

In some instances excessive formality has been produced by planting spiral trees exclusively by the sides of walks ; this destroys one of the chief interest in planting such trees—namely, the air of *animation* ; this crowded form of planting by walks also breaks up comparative proportion, and we lose the charming play of shadows, which in summer days so delight the eye and enhance beauty to the cultivated mind. Who that has seen these model spiral trees in an autumn afternoon, at Drummond Castle, can forget the animated effect ?

When Mr Barron's great works at Elvaston were first seen by critics, there were some able writers who affected to despise formality in trees, and said that we should not attempt the art of making trees artificial ornaments ; we have now trees of exquisite formality in *nature's* own work, and there is no need to argue in favour of introducing a style of trees which are everywhere cultivated.

The object of my writing on this subject is to direct attention to the cultivation of such trees before planting out permanently, and to endeavour to classify the varieties which are the more desirable in peculiar situations. There are many varieties of small trees, not naturally of fastigate growth, that, by small attention "to humour and adorn nature," as Lord Kames loved to say, can be made highly ornamental, and most important objects in the planting of ornamental grounds on different levels. This class of trees is in the background since the giant trees of America came into such towering importance. We are not so eager to follow fashion as to overlook beautiful small trees, more tedious in growth, and far more suitable in gardens where giants cannot stand.

CHAS. M'DONALD.

(To be continued.)

THE TRITONIA.

TO THE EDITOR OF THE GARDENER.

SIR,—I have read with great interest all the valuable papers in the 'Gardener' on bedding plants, and as I try experiments in a small way I would like to contribute my mite. Gladioli, Tritomas, &c., are mentioned for back rows in ribbon borders; with your leave I will now add Tritonia-aurea. This I prefer to Gladioli, as it is not so stiff-looking, and keeps longer in bloom; besides, it looks well from the day it is planted, with its graceful-drooping ribbon-like leaves, which are worthy of their place although it never flowered; and I think its bright orange colour and tall habit are much needed where tall plants are required. When grown in pots for conservatory or greenhouse decoration it is very useful, but does not continue blooming so profusely as when planted out. These two last seasons I have given it a trial, and, as far as I am a judge, it has all the qualities of a good bedder—is easily managed, keeps a long time in bloom, and, lastly but not least, stands our Scotch mists without flinching. With me it commences flowering in the beginning of August, and continues till our great enemy the frost puts a stop to it. As soon as the flowers are destroyed, I cut the stems over about a foot above the ground, lift the bulbs or tubers carefully, and pot them at once. I may mention here, that by lifting-time each bulb has from two to six shoots springing from the bulb, about a foot long, under ground. These shoots become the flowering stems the following season, and must not be damaged when lifting. I use loam and rotten dung. I keep the tips of the shoots an inch below the surface, at regular distances round the sides of the pot. I never dry them off, but keep them growing all winter wherever I can find room, and where frost can't get at them. If your readers have not already given this plant a trial, I hope they will do so next season, and I am certain they will not be disappointed.

ALEX. M'MILLAN.

JARDINE HALL.

ITEMS PRELIMINARY ON DRAINAGE,

As affecting the Culture of the Garden, the Farm, and the Forest.

TO THE EDITOR OF THE GARDENER.

SIR,—About ten years ago those "wise men in the East" called loudly for a *theory* that would embrace and reconcile the various particulars of agricultural experience. Just after I had heard the call, I, with a party, walked over ground where the *Spiranthes* (of Richard) abounds. I mention this circumstance, Mr Editor, because from that you and many of your readers will understand the nature of the land and its subsoil. Well, on this place we met with an old saw-pit nearly brimful of water. I exclaimed, "Here is one of Lord ——'s 'trial holes on a large scale, with the land perfectly dry all round it." From this time it got bruited about—set forth by an obscure person—that "trial holes" were "blind guides;" and the "wise men in the East" gave it out in their next lectures, that no reliance should be placed on "trial holes," as no criteria could be established from them, or something to that effect. Here is a singular instance of the learned drainers acknowledging that all the plausible "stuff" which was spoken and printed on their new discovery (the "trial holes") was null and void, the proof

of which "blind guides" had been set before them by one of the unlearned servants of the "gentry," whose ability as drainers they had so solemnly denounced. (It may be as well to say here, that if our class find a hole in that cloak called Education, we shall assuredly not darn it.)

I state the above fact because it is "one point" clearly established towards a sound *theory* that ought to embrace the various particulars of horticultural, agricultural, and arboricultural experience with reference to drainage—i.e., when water gets into a hole where the soil is clayey, it dissolves the soil on the inside of the hole and seals itself up, and there it remains till it is radiated into the atmosphere, and, as a matter of course, "trial holes" drop out of use by our new school of drainers.

As a means of calling the young gardener's attention to this business of *trying* to find a *theory* for the drainer to go by, it is necessary to adopt the simplest process that we can hit upon, and therefore I say, Throw a pail of water on the surface of the ground, and it will sink down as far as the density of the subsoil will permit it, and that portion which cannot get down out of harm's way lodges there till it is radiated into the atmosphere. When it accumulates to such an extent that the atmosphere does not take back the surplus over what is necessary for that kind of organic life required by the plants of the garden and the farm, the marsh plants appear. Now, cast a lump of clay into a pool of water, and it will sink to the bottom of it. Thus we get hold of what I shall call two forces—the one dashes through the other under different circumstances—this being master of that, and that being master of this; and between these two extremes (natural arts) rests the *theory* which should guide the drainer.

I do not suppose that I can master all the items which rest between these extremes that would lay bare the required theory to guide the different companies and their plodding drainers, but I think that the following experiment will exhibit unmistakably the *error* of the new school in draining 4 feet deep as a rule. Here it is: Between thirty and forty years ago I was engaged for some ten winters in "peopling" a new approach to the place where I live with large trees and other embellishments, after the plan of operations set forth by the late Sir H. Steuart, Bart., whose 'Planter's Guide' was published in 1828, and made no little stir amongst the learned and unlearned planters. I myself was "hard of belief" that I could plant an Oak or an Elm (30 feet high) so firmly that it would resist all external forces without prop or stake. Nevertheless, I had the 'Planter's Guide' put into my hands, with orders to get a janker made, and go and do likewise. The late Mr Gilpin was our landscape-gardener, and the maggot bit him to have an Oak planted in a very low situation on a dense clayey subsoil. When the hole was made large and deep, we cut two drains into four—the one was a turf-drain, and the other rubble; both drains were running, and our deep hole soon filled with water to the level of the drains. I then saw a difficulty which I wished to avoid by making a new hole on one side of the drains; but no, the tree must be planted where the maggot bit Gilpin, and as want is said to be the parent of invention, we set to work with as much faculty as we then possessed. We scooped the water out, and stopped the drains with clay. While that was being done, clay was dug out of the solid bed (this was called dry clay), which was chopped and cast into the hole, and there rammed firmly down, by which means it resisted lateral water, and very little of rain-water ever enters it. This filling-in and ramming were repeated till the mass of dry puddle, so to speak, reached about a foot above the bottom of the drains, when we cut one drain to the right and the other to the left, into the

newly-rammed clay, making them both rubble-drains. On this platform of clay we planted our large Oak-tree, the collar of which now stands about 18 inches above the level of the surrounding turf, and, from its healthy condition, no one could credit that the acorn from which it first sprang had not dropped there from some old Oaks that stand near it.

It is not too much to say that on this patch of ground, where the drains are about 3 feet from the surface, I could have grown the Wheat plant, the Cabbage, and the Bean, triennially from that day to this, as successfully as the Oak exhibits itself.

I had not the remotest idea that, thirty-five years after date, I should have to set forth the little job in the 'Gardener' as an illustration of the uselessness of draining the fourth foot in dense clays, as drains 3 feet deep take away all really superabundant water. The fourth foot of dense clay, as a rule, holds but a small percentage of water even in the winter (its superincumbent load prevents it from holding more); and if it could retain more, this would be of service to vegetation in dry seasons, by being drawn up to the surface by the combined force of radiation and capillary attraction.

The late Mr Parks, "Experimental Draining," informs us (see vols. v. and vii. of the Royal Horticultural Society's Journal), amongst a mass of valuable information on drainage operations, that a drain 4 feet deep discharged 8 pints of water, while a drain 3 feet deep discharged 5 pints. This experiment was performed in a hop-garden. Apart from every other consideration, it is no proof that the fourth foot of clay would have retained the 3 pints of water had that foot of clay not been drained. A hop-plantation is not the most proper for experimental drainage operations, as the surface of such ground is variously treated—even the poles having been stuck into the ground at different depths and different sizes will make a great difference in the percolation of the water. Turf is the best for such experiments to be carried on, and where there is no topdressing put on for several years after the drains are made; then the judgment will not be confounded by operations on the surface.

It is natural in man to surround his dogma with as much evidence as he can bring to its support, but as Mr Parks reasoned from an untenable case—i.e., the trial-holes—his deductions cannot stand the scrutiny of a rustic drainer. But supposing that the trial-holes had stood uncontroverted as a guide to the drainer, and fully supported him in theory that 4 feet deep should be the minimum depth, we have the testimony of the late Mr Baker of Writtle—no obscure author—who stated that he had drained one field after the old Essex method 2 feet deep, with straw and bushes instead of pipes; another with a mole-plough, merely opening a channel in the subsoil, and depending on the density of the soil for its remaining open; a third he had done with tiles 3 feet deep; and a fourth with tiles 4 feet deep: and he defied any one to point out which was which. In support of my own dogma, so to call it, I may state that I have done damage by draining grass-land 2 feet 6 inches deep in the furrows, called 3 feet deep from a line across the ridges.

One field in particular—a dead level, with a dense clayey subsoil, on the surface of which the water lodged here and there during the winter—was thus treated, and though the land is improved in appearance during the rainy season, the tenant found the grass finer but less in bulk under the scythe; he therefore stops the outfall drain in the spring, and opens it in the winter.—I am, Sir, your obedient servant,

A BEWDLEY FORESTER.

BEWDLEY, Dec. 1867.

REVIEWS.

THE GARDENERS' YEAR-BOOK, ALMANAC, AND DIRECTORY FOR 1868. By ROBERT Hogg, LL.D., F.L.S. 171 Fleet Street, London.

This Almanac becomes annually more replete with every variety of information needed by all engaged in horticultural pursuits. It is quite indispensable, and is so well known that we need make no further reference to it than to advise all our readers to procure it at once.

HANDBOOK OF FRUIT-CULTURE UNDER GLASS, with a Description of Sir Joseph Paxton's Patent Hothouses. By SAMUEL HEREMAN.

This pamphlet combines the trade catalogue with a set of cultural directions for the Vine, Pine, Peach, Fig, and the other fruits usually cultivated under glass in this country, with a great many good woodcuts illustrative of the success with which these can be grown in the houses patented by Sir Joseph Paxton; and if their success is anything like what the woodcuts indicate, nothing could be better, though we fear they are indebted to Mr Hereman's pencil for some part of this. Of the Paxtonian houses themselves we never formed a high opinion, believing, as we do, that the system of ventilation is very objectionable. We, however, recommend our readers to buy the Handbook, and judge for themselves.



GRAND HORTICULTURAL BANQUET.

We once heard a gentleman who had a large experience in the management of societies of one sort or other in London say, that a society which did not dine soon got into low water. The members of the Glasgow and West of Scotland Horticultural Society seem to look at matters in the same light, for on the 6th of last month they held a grand banquet in M'Lean's Hotel, St Vincent Street, at which 130 gentlemen sat down, Robert Dalgleish, Esq., M.P. for the city, in the chair, Councillor W. R. Arthur acting as croupier, at which, after the usual loyal toasts were disposed of, the chairman made a very able speech in the interest of horticulture, coupled with the name of Mr Anderson, Meadowbank; after which he proposed success to the Society in immediate connection with whose interests they were met, coupling with it the name of Mr Campbell, the able Secretary of the Society, stating at the same time, that when Mr Campbell accepted the office he now holds, the Society distributed about £80 a-year in prizes, whereas it now distributes nearly £600. Altogether, the dinner was a great success, and will no doubt do much to put fresh life and vigour into the operations of the Society. In saying this, we do not imply that the Society lacked these qualities any more than its neighbours; but we observe that last season its operations resulted in a balance of £143 on the wrong side. We hope to learn, at the end of this year, that matters have been reversed.

We heard it whispered that the Caledonian Horticultural Society purposes dining also. We hope this is correct, for it likewise stands in need of a stimulus, its balance, though not to the same extent, being on the wrong side, like that of its western sister. This year both societies have, however, a balance at their bankers', but we would rather see that increase than decrease.

ARRANGEMENTS OF SOCIETIES FOR THE YEAR.

THE ROYAL HORTICULTURAL SOCIETY'S arrangements for this year have just been completed as follows—viz., Show of Hyacinths and Spring Flowers, March 14; Roses and Spring Flowers, April 18; Early Azaleas and Spring Flowers, May 9; Great Show, June 2 to 5; Special Prize and Pelargonium Show, June 16 and 17; Rose Show, June 30; Great Provincial Show, to be held at Leicester, in conjunction with the Royal Agricultural Society, July 16 to 21. The Tuesday meetings and Show of New and Rare Plants, on January 21, February 18, November 17, December 15, and on the first and third Tuesdays in each month, from March to October inclusive.

THE ROYAL BOTANIC SOCIETY announces, amongst its arrangements for 1868, an Exhibition of Spring Flowers, to continue during one week, from March 21 to March 28; an American Exhibition, to continue from June 1 to June 13; and three Miscellaneous Exhibitions of Plants, Flowers, and Fruit, to be held respectively on May 27 and 28, June 17 and 18, and July 1 and 2. There will also be Lectures at the Gardens on the following Fridays: May 15, 22, 29; June 5, 12, 19, 26; July 3.



Notices to Correspondents.

[Several valuable communications are unavoidably postponed.—ED.]

YOUNG HORTI.—In a stove 20 feet wide and 16 feet high you must have four rows of 4-inch pipe right round it, both sides and ends. You should have a stone, slate, or iron shelf, 2 feet wide, over the pipes, then a path 3 feet wide all round, and the centre occupied by a pit built of brick, and covered over with stone or slate, so as to allow sand or gravel to be placed on these stones. Caithness pavement at 4d. per foot super. will answer for this purpose on which to place your plants. If you place, say, three rows of pipe in this pit, it will give bottom-heat sufficient for propagating plants in spring. You can strike them in sand laid on the pavement over the pipes in the pit. If this is not convenient, enclose a small portion of the pipes on one side or end with brick, and make that the place for striking your cuttings.

INQUIRER.—To cultivate the Hydrangea so as to bloom it well, strike the cuttings in autumn from well-matured shoots of a plant that has been fully exposed to the sun all summer; ripen the cuttings well after they are struck, and set them on the shelf of a greenhouse, or protect them from severe frost in a pit till February, then place them in gentle heat, syringe overhead, and increase the supply of water at the root as the foliage develops itself, and every plant of them will yield a bloom larger than the pot the plant grows in, which need not be larger than a 5-inch pot.

By potting Hydrangeas in peat they are more likely to yield blue flowers; and we have heard that oxide of iron has the same effect.

If you mean by "Water Lily" the British species *Nymphaea*, we have seldom known it fail to bloom if planted in tolerably pure water, the root being properly fixed in the soil at the bottom of the water. If you refer to any other species

let us know, and we will advise you. Carnations and Picotees propagate with much greater certainty by layers than by cuttings, or pipings, as they are generally termed.

REMOVING A SCREEN FROM ARAUCARIA IMBRICATA.—Mr Nicoll asks if it would be likely to injure the branches of an Araucaria to cut away a hedge 10 feet high now sheltering the tree. On ground so high and exposed as about Clova, it would probably injure the growth of the tree for some time to clear away such an effective shelter. A few years ago I had to cut away an ornamental trellis covered with climbers which was interrupting the branches of a large Araucaria. The branches did not at first seem to be in the least injured by the trellis being cut away; but in the following season the branches fell down from their natural swing, and showed other signs of weakness, and have not yet recovered the beautiful sweep of branches on the opposite side. There is a case now before me similar to the one referred to at Clova, only the position is much less above sea-level, and there is a group of Araucarias instead of one. Up to the last year the Araucarias were thickly screened by forest-trees about twenty years planted. Under the direction of the writer the forest-trees were cut back, and a screen of Larch planted at a proper distance as a permanent shelter and an effective contrast to the dark rigid forms of the Araucaria. If the position of the tree will admit of such an arrangement at Clova, it will be more important than any temporary screen.

It is most gratifying to hear of such a perfect Araucaria almost at the base of the Buck of Cabrach. There can hardly be a more severe test of hardiness for the British climate. No doubt the sandstone formation about Clova is highly favourable to the Araucaria roots.

CHAS. M'DONALD.

VARIEGATED HYDRANGEA.—Your interesting correspondent "The Squire's Gardener," while discoursing on this plant in last month's 'Gardener,' doubted if it was a variety of the old garden Hydrangea. His doubt is well founded; it is a variety of *H. japonica*, and very superior to the variegated form of the old *hortensis*, which is not often seen, on account of its inferiority. It is very valuable for the purposes he speaks of, but for bedding out, at least in the north, it is very unfit; it will not grow, and without growth it is without effect. Without laying claim to greater moral courage than "The Squire's Gardener," I would dare the "grins" of the brethren, and strongly recommend this plant for exhibition purposes. I have a saving clause, however. Let horticultural societies offer a prize for collections of miniature plants, either in flower or with ornamental foliage, suitable for front lines and finishing touches. They may be naturally dwarf or artificially dwarfed, but they should be confined to 2½-inch or 3-inch pots as a maximum; and even though this common enough Hydrangea be largely used in that way, if contrasted with such plants as *Statice puberula* and *S. profusa*, which may be had beautifully in flower in thimbles, and the fine but rarely seen *Rochea falcata* and *Euphorbia jacquiniæflora*, and many others equally brilliant, which may be had in fine bloom in small sixties,—it will hardly be condemned by the most captious stickler for fashionable things. The list of plants suitable for this purpose is brilliant and extensive, too much so for insertion in this short notice, and many of them are quite neglected at present. W. S.

INQUIRER.—The following five sorts of Strawberries force well: Keen's Seedling, Ingram's Prince of Wales, Sir Charles Napier, British Queen for the last crop in heat, and Cuthill's Black Prince for the earliest.

GARDENERS' EXAMINATIONS.—The article sent us under the above heading refers to one individual only, and has not enough of general interest for our pages.

MUSCAT HAMBURG.—Some years back, in the garden of the late Mr Palmer of Fulham, a gardener of the name of Lane (who, I believe, is now living, under the shade of his own vine and fig-tree, in the same parish) raised a very excellent Grape, which, for reasons I need not name, was placed in the hands of Mr Snow of Wrest Park for distribution. Some time afterwards, when this Grape was exhibited, the late Sir J. Paxton publicly declared it to be the Black Muscat he knew at Welbeck. Unfortunately, the worthy knight's proficiency as a pomologist was not of the highest order; I knew him personally for many years, and knew Welbeck much better. I speak of forty years back, in the time of Thompson. This Grape is the Muscat Hamburg. EBOR.

J. B. (Kinross).—We are not able to name your seedling Fern. Send it to Mr Moore, Curator, Chelsea Botanic Gardens, and if it is known he will tell you what it is.

C. P. (Bury St Edmunds).—We highly approve of your proposal to carry the stem of the Clematis under the walk in a drain-tile. Fill the tile with good soil, and make a cut or two in the side of the stem, about a quarter of an inch deep, and roots will be sent forth at these wounds. This will be safer than attempting to transplant so old a plant.

Your correspondent "The Squire's Gardener," at p. 479, in your number for December 1867, wishes to know if any of your many readers had tried the Variegated Hydrangea as a bedding plant. I tried it on a limited scale, but when planted out the variegation disappeared altogether. But I think it is hardier than the common, for I have the first plant ever I had planted out, and it has stood without any protection here at Kinross, and I never saw any of the common survive the first winter, even in more sheltered situations. JOHN BROWN.

KINROSS, Dec. 17, 1867.



THE GARDENER.

FEBRUARY 1868.



GLEANINGS OF THE MONTH.



HE gardener's first duty is, of course, to study and to carry into practice the wishes of his employer. Most country gentlemen take an interest in some particular department of their garden—they have some hobby of their own; it may be the growing of dwarf Pear-trees, the forcing of Grapes, the raising of new varieties, Orchid-culture, Fern collecting, or a dozen other things. With the ladies the flower-garden or shrubbery will always take precedence of the kitchen-garden, however much they may prize the choice and early vegetables which supply their table. Now, the intelligent gardener will take his cue from this, and pay special attention to those things in which he finds his employer most interested. But the gardener generally has a little hobby of his own—he too is fond of some particular department more than another; and well is it for all parties when the gardener's hobby and that of the employer correspond, as I am happy to say it does in very many cases. When this is the case, the right man finds himself in the right place, and work becomes a pleasure. I like a man with a hobby; you will learn something from him every time you speak to him. It is a treat to get an original idea at any time, and you are almost sure of one from him.

I do not wish it to appear that I know more than others, or can say anything very original about my hobby, from the observation I have just made. My weak point is a strong love for the propagation of stove and greenhouse plants. It is an occupation in which I have

spent some of the very happiest years of a very happy life. I learned somewhat during my nursery apprenticeship; I added a few wrinkles in Germany, still more in Belgium, and I had afterwards the opportunity of putting into practice all I knew. But of this the reader will care but little to hear; let me go on to speak of a few of the more difficult plants to manage, and of how I learned the way to do it.

One of the most puzzling plants I ever met with was, without doubt, *Tropæolum tricolor*. Cuttings died almost as soon as severed from the parent: then we tried bending the stem down with a little twist below the soil; and I believe one or two were raised by this latter plan, but no stock could be obtained. Now it happened one day that I was passing through a little village where I stopped to call in at the house of one who, little better than a garden labourer, was a most ingenious fellow, and raised more bedding plants within his limited space than one could believe possible. He gave me a rough welcome, and asked me to look round his garden although he had nothing to show. "Well, Joe," I said, "there's one thing you can't show, and that is a square foot of waste ground or a single weed." Joe had always been somewhat quiet about his *Tropæolums*, of which I noticed that he generally had one or two to sell; but on this occasion he asked me very confidentially if I wanted to buy a score of flowering tubers. I was amazed. How could he have got so many? He told me how he had managed it, and for some years I felt bound to keep his secret; but it is a secret no longer. He simply buried the bulb somewhat deeply in the soil of the pot in which it was to remain for the season; or better still, he turned the bulb the wrong way upwards, and before the wiry stems reached the surface they had begun to form a numerous progeny. You will say perhaps that poor Joe found out how to propagate this plant by accident, but so it may be said of many great discoveries; but recollect what Carlyle says, "The eye sees only that which it brings with it the power of seeing."

The Hand-plant of Mexico, *Cheirostemon platanoides*, I found it perfectly impossible to raise for a long time. I had only a tree of five-and-twenty feet in height to get my cuttings from, and they were all, of course, too thick and fleshy for me to do anything with them. I tried cutting the stem half through first, and so leaving it for a time; I tried ringing the shoot; I tried binding a wire tightly round to induce it to form a callosity before cutting; and finally I tried layering a shoot of it in the Chinese style, but failed in all attempts. One day it happened that a traveller sent home some Mexican fruits, and among them was one of this plant; it was dry and dusty, the valves split open, and it looked a hopeless case, but I shook out five or six seeds, which all germinated. I had got a sufficient number of them

to allow myself to experimentalise upon one ; when it was about 2 inches high, I cut the head off, and put it in for a cutting. It struck as easily as a *Verbena*, and the original plant soon made another head. Having thus succeeded once, I followed it up with the others, and we soon had a little stock. This is an illustration of a fact well known among propagators—you can seldom, if ever, raise young ones from an old stump, but take a young and kindly plant of the same species, and the cuttings strike freely enough. Like other rules, however, this is not without its exceptions.

When first I entered the business, the popular axiom was, "Every bud should make a plant ;" but very few years had passed away, and that idea, with very many others, was cast to the winds with shouts of derisive laughter. Who would think now of being obliged to cut the commonest bedding plants to a bud before planting them ? The striking of a score of plants or so from a single leaf—an operation now constantly going forward in every nursery—would indeed have surprised our forefathers. Working, too, from the root was not generally practised then, though some plants can only be raised from bits of the root.

Some amusing incidents occur occasionally in the propagation of plants. As an instance, I may mention one connected with *Aralia reticulata*. When first introduced, there was only one plant with a single stem. The only chance was to cut the top out, but then we must make sure that it would grow ; so instead of making it into a cutting, a piece of *Aralia*-root was obtained, and the scion carefully grafted upon it ; it was then potted, plunged in a gentle bottom-heat, and covered with a bell-glass. It quickly grew, and in its turn soon had to lose its head ; and so we went on as quickly as we could, one after another, with the increase of this plant, always following the same plan of root-grafting. Nobody dreamt of trying to strike it by cuttings or in any other way ; it seemed to be the rule that that was to be the plan ; but one day I knocked out a plant to see how the roots were getting on, and, to my amusement, I found that the root which it had cost me so much trouble to obtain, was dead, and the plant had started an independent existence. There was no more bother about begging or stealing *Aralia*-roots ; we struck the plant now by single eyes.

It is marvellous, after a plant has been imported, how many dangers it has to pass through before it can be said to be established in the kingdom. For instance, that pretty little species of *Croton*, whose leaves on the under side are of such a bright crimson, had a very narrow escape when first it appeared amongst us. For a long time there was but a single plant, although a most simple thing to increase ;

for as soon as a single cutting was struck, the original plant came to grief by some accident ; so it happened with the second and third, and so on through many generations. At last the fatality gave way, and the plant became common. Some years ago, a very valuable case of plants was sent from the Royal Botanic Gardens of Java, to those of Kew. Its coming was anticipated with anxiety, and its safe arrival in the Thames was hailed with satisfaction ; but there is many a slip 'twixt the cup and the lip. The sailors, in passing the Wardean case from the vessel to the quay, permitted it to drop into the unsavoury slush at the bottom. When the tide receded, they made the best they could in groping out the bits of plants and throwing them back, with handfuls of mud, through the roof, which had been smashed in, and so the case was sent on to Kew. It was sad work sifting and washing that box of mud, and finding now and then a bit of a broken frond, or the stump of some plant quite unrecognisable ; but among them were two, making this perhaps one of the richest cases that had been sent to this country that year—those were *Pteris critica albo-lineata*, of which there were two little plants sorely broken, and the other was a leaf of *Spherozyne rotundifolia*. Besides the two plants of the Fern, there were one or two scraps of broken frond ; one of these bore some admirable spores, which were sown in the ordinary way. Every precaution was of course taken with the pot, and in the course of a few weeks the whole surface of that pot was green. I said to my assistant, "This is surely too good to be true ; I'm afraid we have only got a fine crop of *Doodia*, some common *gymnogramma*, or some other rubbish." But a few days afterwards, and we could see the character of our plant ; it was the Variegated *Pteris*, and has since proved itself to be one of the best and most useful Ferns ever introduced. That pot supplied half the country. All the leading nurserymen got a few in exchange for some other plant, and then went on increasing it for their own advantage, so that the plant soon became common.

The *Spherozyne*-leaf was pegged down upon a pan of sand, and soon began to show symptoms of growth by little swellings at the points where the principal veins branched. From these points young plants were in due time formed, and that leaf produced about half-a-dozen plants. Both plants were, curiously enough, again introduced, either in that same year or the next. But it is time I made a halt—a difficult task when one is gossiping about his hobby. It is a subject to which we can return at some future time.

The 'Garden Oracle' for the present year has just reached me ; it is as good a shilling's worth as ever. The list of herbaceous plants seems to have been selected with extreme caution, and the way in which they are arranged renders the list doubly valuable. All the plants are

really worth cultivation, and of these again we have the cream selected for us, so that our collection may be either a large or small one. The several groups are arranged so that plants suitable for certain purposes are brought together; thus we have the aquatics on one page, those suitable for a dry place on the next, those best fitted for rock-work on another, and so on. The list of plants published in the British and Continental periodicals is as useful as ever; but, as in former years, there is a curious preponderance of Orchids, many of which are mere botanical curiosities. There are also admirable lists of the best florists' flowers which have been produced during the past year; and the book is one which should be within the reach of every gardener.

I am sorry to be obliged to inform "A Subscriber from Lancaster" that I can get no information as to the perfumed fibre said to be used at the Turkish Baths. From numerous inquiries made, I find that my friends are all of my opinion, that there is no fibre naturally scented. How is the fibre used? Is it the leaves of the Lemon Grass? Can our correspondent obtain one or two strands of the fibre, or give us a little more information as to how it is employed?

If last year produced no very great novelty, at least the present makes signs of producing something that shall really astonish us. A certain Austrian baron named Eugene de Ransonnet has promised to publish 'Sketches of the Inhabitants, Animal Life, and Vegetation of the Lowlands and High Mountains of Ceylon.' But, in addition to this, the author will produce some views of the submarine scenery near the coast, taken in a diving-bell. Fancy chromo-lithographs of the bottom of a tropical sea!



NOTES BY THE EDITOR.

(Continued from page 469 of 1867.)

THORESBY PARK, the seat of Earl Manners, holds high rank amongst a noble cluster of splendid domains in the midland counties of England, familiarly known as "The Dukeries." The park itself is of immense extent, at least 2000 acres being enclosed within its boundaries, many hundreds of which are still occupied by the real original Sherwood Forest Oaks. Grand old fellows they are. We drove many miles amongst them, each individual of them being worthy of special admiration. These are not poor, stunted, gnarled subjects, with little about them to call forth admiration except their age. They lack nothing of the picturesque which age can give to an Oak, but with it they possess robust health and vigour; and, as we saw them in August, they were

clothed with fine glaucous dark-green foliage, indicating high health. In a distant part of this forest is to be seen the Oak where Robin Hood and his merry men used to hang up the deer they killed—still known as “The Slaughter Oak.” This tree we did not see; but we saw and stood inside “The Major Oak,” certainly the largest tree we ever saw. We were told by an old man who sits beside it all day, and makes a living by holding the horses of visitors to the tree, that, the day before we visited it, the Town-council of Sheffield had a picnic under it, that eleven of the councillors were inside it at one time, and he added, “Most o’ them were big uns.” The circumference of the trunk of this noble tree is 42 feet; the stem is clear and free from branches to the height of 32 feet; the spread of branches, 75 feet. The entrance in the side resembles the Gothic door of an old church. Though the tree is hollow, except a crust of something like 12 inches thick, the top and branches are in excellent health, covered with fine foliage. Standing within this tree, where thousands had stood ere we were born, and where thousands will stand when every human being on the earth at this date has vanished from its surface, we felt disposed to moralise on the ephemeral nature of our race; but time admonished, and we had to be off to other scenes.

Taking a detour of some six miles along the outskirts of the park, we came in view of the noble mansion the Earl is erecting at a distance of 600 yards from his present residence. The latter, like most old mansions, is situated on the lowest part of the park, close to a lake some 90 acres in extent; and we should imagine, from its situation, that it must be damp. Around its front there is an old flower-garden, with little about it worthy of remark except that the beds were well filled with fine groups of the most showy bedding-plants. The new mansion stands on much higher ground, and rather too fully exposed to the western gales. It is in the medieval style of architecture, highly ornamented, with a frontage 500 feet in length. There are to be grand terraces in front, with a flower-garden and sheltering shrubberies.

To the east of the mansion, and rather too near it, but capable of being completely hid from it by judicious planting, stand the new kitchen and forcing gardens. They occupy $8\frac{1}{2}$ acres of ground, $5\frac{1}{2}$ of which is enclosed by well-built brick walls, the remainder forming slips on the east, south, and west sides, and an orchard on the north. The whole of the walls have their borders concreted to the extent of 14 feet out from the wall, on the top of the poor red sand that forms the subsoil of the garden. On this concrete is laid 4 inches of broken stones to act as drainage, then a turf with the grassy side down, and on that 2 feet of good sound calca-

reous loam from a distant part of the park. The east aspect of the east wall is planted with Pears; the west aspect of same wall, half Plums and half Cherries. The west wall has Pears on both aspects. The south wall is planted one half with Apricots, the other half with early Pears, Plums, and Cherries; the north side of this wall is planted with Morello Cherries, Plums, Gooseberries, and Currants, the latter for matting up for winter use. These trees had been planted four years when we saw them, and they had covered the walls with fine, healthy, fruitful wood; never before had we seen such fine, healthy, vigorous, young trees, indicating that they liked their situation well. The kitchen-garden proper is intersected by two fine broad walks; that which intersects it from north to south passes out through a pair of very splendid iron gates. Fine borders of flowers line the sides of these noble walks, which are each 550 feet in length. The arrangement of one of these most effective borders was, next the Box-edging, Blue Lobelia and Mrs Pollock Geranium alternately; then a row of Iresine Herbstii and Variegated Alyssum, also alternately; then a set of panels of Purple King Verbena, and a Stella Geranium in the centre; behind these panels, a line of the finest plants of Viola cornuta we ever saw; behind that, a row of Perilla and Ageratum Mexicanum alternately. This was a lovely border. The principal range of glass is lean-to against the upper south wall, and when two houses that are to be erected at the west end of the range are built, it will be 560 feet in length. The centre of this fine range is a lofty conservatory, running out with its end to the south, thus making a break in the range. Passing out of this house to the west, we entered the Muscat-house, 45 feet long and 18 feet wide. Here we saw one of the finest crops of Muscat Grapes we ever beheld—many of the bunches 6 lb. weight, none of them under 2½ lb., and the crop very heavy; yet they had all the appearance of finishing in fine style. The next house to this was planted with Lady Downes, Black Alicante, and Raisin de Calabria: the crop heavy, and the bunches large. The next, a peach-house the same size as the vineries, and the crop nearly gathered: the trees in high health. To the west of the conservatory we entered the early vinery—the crop all cut; the second vinery crop nearly all cut; and then the first peach-house. These are facsimiles, as far as size goes, of the houses on the east side of the conservatory. In addition to the houses named, there is, in the same range, to the west of them, a late peach-house, 124 feet long and 12 feet wide—the wall trellised with wire for training the trees, and the rafters the same half way up; so that, while a crop is got in front, the sun has full action on the back wall. This house was furnished with fine trees in full health. This range of houses stands on a very broad terrace, about a

yard above the level of the upper part of the kitchen-garden ; and on this terrace, in front of the lean-to range, and sufficiently far off as not to shade them, stands a range of span-roofed forcing-houses, eight in number, varying from 25 feet long and 13 feet wide, to 40 feet long and 18 feet wide. In these we saw splendid examples of cultivation, both plants and fruit ; nothing could be more successful than the Pine-cultivation. The Smooth Cayennes were worth going a long way to see : the same may be said of the stove plants, Melons, Cucumbers, Figs, &c. On the north side of the wall, against which the hothouses are built, stands a fine range of offices for all purposes connected with a garden of the highest class ; and on the other side of a road in front of them, and on more elevated ground, stands a long range of forcing-pits for Pines, Melons, Strawberries, and suchlike, besides pits for propagating and wintering such plants as are used for bedding out in summer—the whole forming one of the most compact and effective garden establishments we ever saw, creditable alike to its noble owner and to Mr Henderson, who has displayed as much judgment in its formation as he continues to display of real practical horticultural skill in its management.

We learn that since our visit water has been laid on to the garden, with a pressure that makes it possible to wash all the trees on the walls by merely attaching a hose to pipes laid down all over the garden : no small advantage this, and one we envy very much when carting our water here during summer from the polluted Esk.

A word about Mr Henderson's house and we are done with Thoresby. It stands at the east upper corner of the garden, is built of brick, and the roof is covered with fine encaustic tiles. It was designed by Lady Manners, who has shown fine qualities both of head and heart in its construction—of head in the excellence and chasteness of the design, and of heart in having given her gardener such an excellent and comfortable house. On the ground-floor are two fine sitting-rooms ; a fine large kitchen, with oven and all needful conveniences ; a back kitchen, with range and brick oven, a yard behind—with a complete set of offices and larders ; the arrangement of bedrooms being equally commodious. We advise all who wish to make their gardeners comfortable to take a leaf out of Lady Manners's book, who is no mean architect, as a grand bow-window in the front of the mansion, designed by her, and of a most unique character, bears ample testimony.

There was much in the details of the practical management of these fine gardens worthy of note, but space forbids a reference to them—at present, at least.



NOTES ON GREENHOUSE PLANTS.

(Continued from page 14.)

THE CAMELLIA.

PERHAPS no race of plants is more deservedly and universally esteemed than this grand genus. Its cultivation has been the theme of repeated rehearsal by the pens of many of our most eminent horticultural writers. We do not presume that we are able to advance any important additions to the papers on this subject already extant, but we think it may be useful to go over the subject again, that we may refresh our own memory, and at the same time keep the *Camellia* before the minds of our readers. For the edification of the inexperienced, we propose giving a more minute and lengthened description of cultivation than we have hitherto done in these Notes.

The *Camellia* is a native of Japan, and was introduced into this country in 1739. It is a tall-growing evergreen shrub, and may be considered nearly hardy. In our own time it has undergone, step by step, wonderful and uninterrupted improvements, both as regards the extension of its varieties, and towards the perfecting of its flowers. The plant, when healthy, is conspicuous for its massive appearance, its solid foliage of glossy richness, and its flowers, which are produced in magnificent profusion throughout winter and spring. Those high qualities have rendered it a world-wide favourite.

To clear away numerous misconceptions as to the hardness of the *Camellia*, we will beg of our readers to cast their thoughts back to the winter of 1864-65, which, it may be remembered, was a severe and lengthened one. In the latter end of April we went to the Highlands, at which period we found winter had not entirely resigned her sway. The mountain-tops were deeply covered with the remains of mid-winter's snows, a circumstance we have not witnessed since, at the same season, unless on a few of the loftiest of the Grampians. While looking over our new charge, we were surprised to find a group of rejected or "neglected greenhouse plants" at the end of the conservatory, outside; these had been exposed to the winter's frost and "sleety dribble," and of course looked extremely miserable, with wood dry, and leaves shrivelled from neglect. Still the majority of them retained a freshness sufficient to make it just possible to rescue them from death. Among this group were nine old *Camellia* plants, in pots measuring from 12 to 16 inches in diameter, which were rent from exposure to the action of winter. These, with other old favourites, had our immediate attention, having their balls broken partially up, the dead roots cut away, and the plants repotted into a light fresh loamy mix-

ture, with a small portion of peat and sand added. They were then plunged among leaves in a deep pit, with fire-heat at command, and had a good watering both at the roots and overhead. Air was admitted sparingly, and a light covering applied on the glass to subdue the effects of strong sun. This treatment was continued until signs of returning life appeared, from the foliage assuming a natural appearance, and the points of the shoots presenting indications of growth. This was our signal to cut back the branches to improve their symmetry, and that the plants might produce an equal and harmonising growth of young wood. And now, with few exceptions, the plants are covered with healthy young wood, large handsome foliage, and flower-buds. From this example we may infer, so far as the constitution of the Camellia is concerned, that it is hardy, more especially when it is understood that their pots were not even plunged during this severe winter's trial. Other important considerations, however, present themselves here. Will this hardihood insure flowers, and otherwise sustain the character of the plant as a hardy ornamental evergreen? I fear not; and that such facts only make it the more apparent that its culture under glass a part of the year is indispensable to good results.

Culture from Seeds.—This may be accomplished by sowing in pans amongst a light fibry loam, from the middle of February to the beginning of March, placing the pan in slight bottom-heat, inside a frame or pit, and attending to keeping the soil moderately moist until the seeds germinate, by sprinklings of tepid water through a fine rose. With the first indications of the seeds breaking the surface, apply a mat over the glass to modify the effects of sunshine, and admit of slight ventilation in mild days. Continue this attention forward to the time when the plants clearly show the third joint and have developed the second leaves, when air and light may be given by degrees more abundantly until they are hardened sufficiently to stand full exposure; and when the time has arrived suitable for their removal, plant them into pots 3 inches in diameter, preparing a mixture of loam and peat, with about a sixth of silver sand. Give a good watering, and again transfer them to their old quarters. Attend to shading until fresh root-action has commenced, at the same time giving air in more reduced quantities. Another shift of pots is requisite as soon as the first set is filled with roots, if symptoms of ripeness are not shown. But should a ripening tendency be indicated, it is better to wait until spring, just when fresh signs of growth commence, when all that are in danger of getting pot-bound should have a shift. As soon as it is ascertained that flower-buds have been formed, weak liquid manure may be supplied once a-week. This will materially assist the perfect development of the flowers, if a steady

progressive growth is sustained ; but if not, better withhold manure, and modify in a great degree the supplies of water, as it will only tend to assist in casting the flower-buds before they open. It is a great object to maintain a steady moderate temperature—say a minimum of 44°, and a maximum of 57°—this will produce flowers slowly but surely. As soon as the flowers are properly expanded will be the time to judge their qualities ; and if luck favour you with any novelties, or anything worthy preserving, these can be put aside and named, while the rejected plants will form fine stocks for budding or grafting upon. A few of these seedlings are very useful, and afford excellent practice for the amateur who can command his own time, without mentioning the delightful enjoyment derived from such experiments, although the success may be rather less than splendid for the first few trials.

Propagation by Cuttings.—Early summer is generally considered the best period for this process, when the young growths are about ripe, or when the last pair of young leaves is nearly expanded on the points of the shoots. At this stage the wood is not yet hardened, but has acquired consistency enough to preserve it from damping during the rooting process ; and at the same time the cuttings are in possession of certain growing elements which materially assist the rooting process, and return a greater percentage of plants than if the wood were allowed to get older, and to acquire its natural hardness. In the preparation of the cuttings a sharp knife ought to be used, drawing the knife clean through below the third joint without starting the bark. Dress away the lower pair of leaves, and the operation is complete. For a compost use equal portions of well-sifted peat, loam, and silver sand properly incorporated. Crock the pans to the depth of 2 inches, and fill the remaining depth with the mixture ; next press the body firmly together, and add half an inch pure silver sand ; again press the sand in its turn to a compact body, and dibble in the cuttings, being careful that they have a good hold of the soil. Complete the business with a smart shower through a fine rose. Plunge the pans into a similar heat, and otherwise attend to them, as recommended for the seeds ; but in this case placing a hand-glass over the pan, to exclude air and prevent hurtful tendencies arising from exposure when the other occupants of the frame are receiving attention. Great care ought to be exercised, while the cuttings are in their striking-stages, that they do not suffer from superabundant water, and yet are kept a little damp at the root—that ventilation is given regularly to carry off the vapour which gathers inside the hand-glass—that a quiet but steady bottom-heat is maintained—that shading is not neglected in glaring sunshine, and also as to removing any dead leaves and keep-

ing the surface of the bed free of weeds. When the plants are rooted sufficiently to warrant safe removal, a very effective method is to turn the pans on end, and give a gentle stroke on the bench. This will form an opening sufficient to allow a spade to pass between the soil and the edge of the pan. When the pan is replaced on its bottom, the spade ought to be made to skim between the crocks and the bottom of the pan. By this means the whole body can be lifted out at once without breakage, and the plants separated with a nice ball adhering to each. Transplant into pots 3 inches in diameter, in the same mixture used for cuttings, the covering of sand excepted; then replace in heat, and keep partially shaded and ventilated until their stems stand erect and root-action begins, and then again inure them to air and less shading by degrees.

Soil for general Culture.—Considerable difference of practice prevails on this point. Some advocate pure turfy peat, others pure loam, and another prescribes a mixture of half-a-dozen ingredients; and each in his respective case may have proved his theory to be good by his productions. Still, in some instances, I fear the experimenters were treading such dangerous ground that the inexperienced ought not to venture on it. The Camellia will exist for a time in any soil, but a heavy tenacious one is certain death to it sooner or later. A soil of good consistency, without adhesive qualities, in my opinion, is the happy medium that is sure in any one's hands to be productive of good results—such a soil, for instance, as the following: Two parts old rich fibry loam, two parts fibry peat in which silver sand abounds, with about a sixth well-decomposed cow-droppings in addition for old plants, if in a vigorous condition of growth and root-room stunted. The whole ought to be well chopped together into a thoroughly reduced condition before it is used for potting, but not sifted. I venture to say that the foregoing compost, if used in a dryish state, will prove a satisfactory receptacle for the roots of the Camellia. A. KERR.

(To be continued.)



FRUIT - CULTURE.

THE FIG.

(Continued from page 10.)

Culture in Pots.—There is no fruit-tree more susceptible of successful cultivation in pots than the Fig, and we know of no place where this method of culture has been so long efficiently practised as at Harewood Gardens, near Leeds. For more than twenty years, by the late

Mr Laurell, and since his death by his able successor, Mr Fowler, uniform and excellent crops of fruit have been gathered from pots. Many years ago we were advised by a nobleman of considerable horticultural skill, who was in the habit of visiting Harewood annually, to apply to Mr Laurell for his method of treating Figs in pots. We did so. We have repeated our application recently to Mr Fowler, and we find that he treats them identically as his predecessor did. We give his treatment in his own words :—

“The house we grow our Figs in pots in is a very useful one. We grow Vines up the rafters, Figs in the pit, and Strawberries on a shelf along the back wall. It is a lean-to house, and has no means of heating except a flue along the back wall ; and I do the best I can to give all a proper share of treatment. I always repot the Fig-trees about the end of October. The old trees I shake out, and put into the same sized pots again ; younger trees I give a very small shift to. When all are potted, I place them in a span-house, and expose them to the weather. By the 1st of January I prepare the pit in the house where they are to be fruited, which is 4 feet wide, by filling it with oak or beech leaves to the depth of $3\frac{1}{2}$ feet. As soon as they begin to get warm, which they do in a few days, I plunge the pots to their brims. When the leaves settle, I stake all the branches neatly into their proper positions. Nothing more is done to them except syringing them overhead, and giving them occasional waterings at the root with tepid water till the roots begin to show on the surface of the soil. I then give them a good topdressing with a compost half dung and half loam ; in this they root vigorously all the season. This and occasional waterings with liquid manure enable the plants to bear heavy crops of fine large Figs. The first crop begins to ripen about the end of April, the second about the middle of July. I may remark that the sources of success in growing Figs in pots are, slight steady bottom-heat, a plentiful supply of water at the roots during the season of growth, and attention paid to syringing and keeping the foliage clean. By adopting these means we gather as fine fruit from trees in pots as we do from trees planted in borders in another house.”

Our own experience, though not so extensive in this department as Mr Fowler's, perfectly corroborates what he writes.

Open-air Cultivation.—As we have already remarked, the Fig cannot be generally cultivated in the open air north of London with anything like uniform success. In this respect, however, it is capricious. In the gardens here at Dalkeith the Fig will not ripen once in five years on the open wall ; whereas at Ormiston, some four miles off, and at a much higher elevation, there are Fig-trees that seldom fail to

ripen the first crop of fruit. And even as far north as Morayshire Figs ripen in the open air against a wall. In attempting their cultivation in the open air, we recommend the following mode of treatment: Let the bottom of the border be concreted so that none of the roots shall be able to descend into the subsoil. Let each tree have a walled-in enclosure for its roots, 8 feet in length along the wall, and 4 feet in width, the walls forming these enclosures to come to within 4 inches of the general surface of the border. If the trees show a heavy crop of fruit, the roots may be allowed to ramble over the tops of these walls into the general border, amongst any vegetable crops it may contain; but the moment the trees begin to show a tendency to produce rank-growing unfruitful wood, these wandering roots should be cut off, either in whole or part, according to the exigency of the case. In this way the trees can be induced to form short-jointed fruitful wood that will ripen early, and stand the frost well. There is nothing so easy as to feed a Fig-tree with liquid manure when the fruit is swelling, and nothing so fatal to its fruitfulness as to allow it to ramble, with its roots ranging over an unlimited field of rich soil. We like to see a Fig-tree make firm short-jointed growths of not more than 6 inches at a time, instead of as many feet with scarcely a fruit-bud.

Pruning.—The Fig is a tree that bleeds a great deal whenever it is cut, and we have never been able to prevent this by any known styptic, just because the bleeding ensues at once when the wound is made, and a styptic has no time to set before it is expelled by the flowing sap. In these circumstances we avoid pruning the Fig with the knife as much as possible. Rather than have to remove superfluous wood, we prefer the prevention of its production by attention to the roots, and by pinching the points of the young shoots when growing in directions where they are not required. True, they bleed then also, but not to the same extent as when large branches are cut off. The Fig bears most readily on those branches that are twisted and turned downwards, and we have known “ringing” make the part of a tree fruitful to which it was applied; but this is a bad plan, only applying to some parts of the tree an unnatural process, to effect but very partially what should have been effected generally by attention to the action of the roots. We repeat again, give the trees a limited range for their roots in a border the composition of which is largely indebted to brickbats, lime-rubbish, chalk, and a mellow friable loam; and other circumstances being suitable, there will be no barren Fig-trees if the proper sorts are selected.

Propagation.—As we have already stated, the Fig is increased either by cuttings, layers, or suckers from the root. We prefer the former

method. The cutting may be taken from the plant before growth begins; and we like one 8 or 9 inches long, with good prominent buds about its point. Such a cutting taken off the parent plant with a clean cut, may be potted at once in soil one-half of which is pit or river sand, the other half light loam, taking care that the pot is properly drained. It may then be plunged in a bottom-heat ranging from 75° to 90°, in a frame, pit, or stove, where the temperature of the air ranges from 60° of fire-heat at night, to 80° with sun during the day. With such treatment it soon roots and begins to grow. When the centre-shoot has grown about 6 inches, the point of it should be pinched out to make it branch. When the pot gets well filled with roots, the plant should have a shift into a pot which will admit of an inch of soil all round the ball, but not more, as we think it best to induce the Fig to make what we may term short staggy growths instead of long ones. The latter lead rapidly to the formation of large unfruitful plants, which is by no means desirable. Cuttings may with equal facility be struck during the season of growth, in which case the young wood should be allowed to get pretty firm, and should be taken off with 3 inches of the old wood of the previous growth attached to it. The cuttings may be potted and treated as recommended for those of the ripe wood, with the addition that they should be effectually shaded from the sun's rays till they root, if placed in a close frame; and if in a more airy open pit or stove, they should have a bell-glass placed over each pot of cuttings, or a hand-light over a number of such.

Temperatures and general Treatment.—We have already said that the Fig in this respect requires, or thrives well in, the same climate under glass as the Peach. When they first start into growth, the plants should be well watered at the roots with tepid water—say at 80°—and syringed morning and evening overhead with water of the same temperature as the air of the house. This should be continued during the whole season of growth except when the fruit is ripening. The fruit of the Fig-tree makes its appearance pushing out of the last year's wood fully formed. After it gets to a certain size it seems to make no progress for a considerable time. This is what in the case of most other fruits is termed the stoning period; and if the trees are neglected in any respect at this critical stage with them, as with nearly all other fruit, the young Figs become yellow and fall off. Where bottom-heat is applied it should be steady, and the soil kept moist; but no stagnant water should be tolerated, nor should the temperature by artificial heat be allowed to exceed 60°—the sun-heat not to exceed 75°. We have already remarked on the importance of light and air for the successful cultivation of this fruit, and its importance increases as the

ripening period arrives. When the shoots on which the fruit is ripening have made 6 inches of new growth beyond the fruit, the fruit of this new shoot should be pinched out, when it will generally show a second crop in a short time; but if it does not, and starts vigorously, producing wood instead of fruit, diminish the supply of nourishment at the root, by withholding liquid manure if the plant is in a pot or in an insulated compartment, as previously indicated; if not so situated, cut away some of the leading roots. When Figs are started—say in January—the temperature, till the fruit makes its appearance, should be 45° by night, rising to 60° from sun-heat during the day. These temperatures may be increased a few degrees weekly, till the night temperature is 60°, and the day temperature from sun-heat is 75° or 80°.

Space admonishes us that we must postpone a reference to the enemies of the Fig, and the various sorts most suitable for forcing, till next month.



MUSHROOMS.

TO THE EDITOR OF THE GARDENER.

SIR,—A dish of Mushrooms is always an esteemed dainty, and when to be had is in more constant request than most other products of the garden; yet, to keep up a constant supply of good Mushrooms throughout the winter and spring months, is not the least creditable feat that the gardener may accomplish. In committing other crops to the ground, we can generally look forward with tolerable certainty to an ordinary return for our labour; but in spawning a mushroom-bed under what we may conceive to be the very best conditions, the cultivator has seldom the same assurance of success, but almost as often, and unaccountably, fails as succeeds.

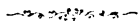
It is not my intention at present to go into the subject at length, but merely to offer a hint about the material most suitable for forming the mushroom-bed, and a word or two about temperatures. On the first of these two points I think undue scrupulousness and particularity exist, many, and especially the inexperienced, believing that pure horse-dung alone is indispensable to success—an altogether erroneous idea, and one calculated to dissuade many from attempting Mushroom-culture altogether, and at any time leading to unnecessary labour and expense, as I have proved by experience. I confess, however, to having been somewhat particular myself in this respect, until the following circumstance dissipated my notions on the subject: About two years ago, wishing to plant a pit of early Potatoes, and not having sufficient leaves at hand to form a bed, several loads of stable-litter, chiefly straw from which the droppings had been shaken, were emptied into the pit, and trodden as firm as the elastic nature of the material would admit. About a foot of light soil was afterwards spread over it, and a crop of Potatoes planted about the middle of December. Nothing particular occurred till about the beginning of April, and the Potatoes were about ready for getting, when one morning my attention was called to an extraordinary eruption in the centre of the bed. It was at first suggested that moles had been

at work, but, from the size of the hillock, it looked rather as if a pig had been asleep beneath, and had suddenly taken it into its head to get upon its feet, causing a proportionate upheaval of the surface, and upsetting the Potatoes at various angles. It proved, however, on examination, to be several huge clusters of Mushrooms "of girth enormous," and which turned out to be only the heralds of a crop such as I have never seen for quantity and size. The only fault was, they never came of the approved "button size," seldom covering less, even at the earliest stage, than the bottom of an inverted teacup, and frequently in clusters the size of a half-peck measure. Of course the reader will at once judge that the spawn originated in the stable-litter without artificial assistance. Since then I have been less particular, and use the dung for the beds in the mushroom-house in a much ranker condition than is usually done; nor would I hesitate to use leaves and short grass to mix with it, if scarcity of the material rendered it necessary. I may state that the result has been perfectly satisfactory. Last year we were able to keep considerably ahead of a pretty heavy daily demand throughout the winter and spring months with Mushrooms of first-rate quality. This season we have been even less particular, taking the litter pretty much as it comes, and carting up sufficient at once to make a bed, having it of course turned over frequently till it sweetens and decays, and the crop is abundant and excellent.

I would only urge, in conclusion, the importance of maintaining a steady temperature at all stages of Mushroom-culture, never allowing the temperature of the house to range above 55° from artificial heat. They will stand a higher temperature, but, according to my experience, the beds cease bearing sooner. At the above temperature we have had beds bearing well over three months.

T. SIMPSON.

WORTLEY HALL.



BEES.

It has been my intention for some time to increase the number of my stocks of bees, have them all of proper sizes, and in the best possible condition, and then commence to give to the public annually the balance-sheet of my bee-farm. I bought some weak small hives about Christmas 1866. It would be a difficult task to find really good hives within fifty miles of Manchester, hence we are compelled to purchase very inferior hives, if we purchase at all. A word or two in proof of this will show how great are the ignorance and prejudice of the best bee-keepers of Lancashire on one of the most important points in bee-management. I took ten of my hives last August to a cottage garden on the edge of a moor in Cheshire. In that garden there were thirty-eight or forty hives belonging to these experienced bee-keepers. My hives of course were fully twice as large as theirs. They very lustily tried to preach down the folly of keeping bees in large hives, declaring that the owner of them did not know anything of bee-management in this cold climate, otherwise he would never use hives so large. What

were the results? Each of the best of my hives gained 40 lb. weight on the moors, and kept themselves, whereas the best of my neighbours' hives did not gain more than 20 lb. each. It is very difficult to remove prejudice of long standing; and I find it difficult to bring my stock of beehives up to a point of excellence while we are buying and increasing our number. I commenced 1867 with eighteen stock-hives; one-half of this number were weak, the other half were moderately good, stocks; the value of the whole was £16. I got eighteen swarms only, which increased the number of my beehives to thirty-six. From twelve of these we took £18 worth of honey and wax, thus leaving twenty-four hives for stock, which I value at £27. Leaving expenses out of the count, the profits of my bee-farm last year was 30s. per hive. The season, as a whole, was not favourable for honey-gathering. The severe frost of the previous winter injured the white clover so much that it did not flower abundantly, and hives were therefore light in weight when taken to the moors.

As some of your readers are asking when my book on bees will be ready, I wish to inform them that my health failed greatly last year—indeed, the task of writing the book was all but abandoned; but now, I am glad to say, my health is recruited, and it is my intention to write hard, with a view to put the manuscript into the hands of the printer as soon as I can.

A. PETTIGREW.



GARDENING IN DURHAM COUNTY.

(Continued from page 472 of 1867.)

PINES are grown extensively and successfully, at Ravensworth and Brancepeth, as before hinted—fine fruit of the Queen in succession at the former place, in indifferent structures. New additions have lately been made at the latter place to the already fine pine-stoves, which are span-roofed and wide, but, we think, rather lofty. The whole have just been heated by the Messrs Weeks on the one-boiler system, four rows of pipes running round the stoves, one above the other, which looks very compact. The same firm have also erected an elegant light-looking conservatory here, which, if not baronial in design, will be the best adapted to the health of the inmates, as it will admit and distribute floods of light. The variety of Pine most in favour here has long been the Providence, grown to a very large size, although a portion of other varieties are grown, such as the Blood Red, Smooth Cayenne, and Queen. Mr Dale now objects to span-roofed houses placed end on to the sun, and we agree with him in thinking that the lean-to

or half-span facing south is for all seasons to be preferred in this climate, where smoky or cloudy skies prevail. New stoves have just been erected at Raby Castle on an admirable principle—half-span low houses—which brings the plants well up to the moist warm air near the glass, with abundance of piping for top and bottom heat; those for top-heat being underneath the pathway or grating, and a row of troughed pipes laid round the curbs of the pits close to the plants, which are constantly supplied with water from taps specially placed to fill them. Those houses have a sweet moist atmosphere so suited to the health of all stove plants, resulting from the mild heat from abundance of piping. The broad saddle-girth-looking leaves of the Pines showed how they enjoyed it.

On the deep light soil lying on the limestone about Sunderland, Grapes are grown to great perfection; better Lady Downes we have never seen than those grown at Ashburn Gardens (Mr Backhouse's); Hamburgs, and others equally fine in berry and colour.

I daresay my readers will agree that a quicksand is not just the place on which to grow Vines. From an originally bad choice of situation, this, unfortunately, is the sort of position the vine-borders occupy at Brancepeth—a shifting, slippery, sandy loam, soft as a puddle—a reclaimed bog, in fact, any depth. Drains 10 or 12 feet deep have just been put in with something of the engineering difficulties that Stephenson had in Chat Moss. Perfect success on such a position has defied the most determined perseverance. It is wholesome to come across such instances, to warn gardeners and employers in the choice of site; for although much of the ornamental must be sacrificed in the kitchen and forcing gardens, that is no reason why they should be put out of the way. The useful demands a prior consideration; for it is not too much to say that any piece of ground can be rendered ornamental, but it is clear that any out-of-the-way place may not be eligible for the growth of fruit. I may remark that admirable Grapes are grown here in pots.

The past has been a season of foxy Grapes; yet some of the best coloured and best flavoured we have seen exhibited this year were grown in the heart of the collieries at Hetton Hall and Castle Eden, the seat of Rowland Burdon, Esq., proprietor of the romantic Castle Eden Dene, so attractive to pleasure-parties and the naturalist, being rich in wild plants and some of the rarer butterflies; and to the geologist, from the lay of the strata exposed, the composition of the boulder clay at the lower end, and evidence of an ancient elevated sea-beach. The orchard-house system is carried out in this neighbourhood with exceptional success, which we hope to refer to.

THE SQUIRE'S GARDENER.

EPIPHYLLUM TRUNCATUM.

THE culture of this old and useful favourite is so simple that I do not propose to tire my readers with those details. It has done us such good service so often, that I feel constrained to rehearse what it is capable of, by way of a reminder to some, or a recommendation of it to others. First, then, as a winter flowering plant, it is invaluable to those who have to keep up a brilliant show of flowers all winter on cheap and simple materials. We have a batch of several dozens at present (the last week in December) about at their best—plants of all sizes and various shapes—dwarfs on their own roots, high standards, half standards, and pyramids—and they will keep on in flower until February. It stands the heat of the drawing-room as well as most things when in flower; and what proves certain death or paralysis to many plants during this ordeal, it bears with seeming impunity. It makes quite a sensation-plant for dinner-table decoration, either for low side vases, or for arranging down the centre as standards.

Nice-bloomed heads of it on slender stems, associated with well-grown heads of *Centaurea gymnocarpa*, say 2 feet high, also grown as a standard on its own slender stems, realise in a natural form the idea of Mr March's slender glass flower-stands for the same purpose. It is a very accommodating plant, as most of the *Cactus* tribe are known to be. I have on several occasions felt self-reproved by the display from some of the species glaring at us through a cottage window. This *Epiphyllum* is just a plant to be safely recommended to the amateur with a vinery, or with a greenhouse and melon-pit: it is not by any means a thorough-going stove plant—mine at least do not receive stove treatment throughout, nor indeed at any time; for nine months in the year it is simply a greenhouse plant, the other three it wants a close moist heat and slight shade to make its growth, which may either be in a vinery, a pit, stove, or even warm greenhouse. Afterwards it cannot have too much sun and air, but no draught. With a few old plants to supply slips, a stock of it of any desired shape of plant may soon be obtained as easily as getting up a stock of *Geraniums*. Moreover, old plants are much benefited by being thinned out occasionally. It strikes freely enough in sand, but on its own roots it is not so satisfactory as grafted on a free stock, and indeed, on account of its drooping habit, it is preferable with even dwarf plants to have them on a single stem, elevated a few inches above the pot. Of all plants this is perhaps the most easy to graft; all that is required is a bit of bast or thread, and a sharp knife. Neither clay, wax, moss, nor anything else, is required, and the thread itself is simply wanted by a single tie to keep the scion in its place. We must say, however, that the

only stock we use is the old *Cactus speciosissimus*, as suiting our purpose perfectly well, and perhaps because we have no other handy. The *Pereskia aculeata*, a plant not now often seen about gardens, would perhaps make the best stock ;* it is a tall-growing, woody, yet green and succulent, and very spiny plant, with real leaves, very stiff in habit, although also a sort of *Cactus*. Several of the other *Cacti* would also answer for stocks, as also for some forms any of the tall-growing broad-leaved *Epiphyllums*. Although in danger of treading on dangerous ground, we may venture to say that the *Cacti* are first cousins to the common Gooseberry, as may be seen by a comparison of their fruits ; but the branches of the *Pereskia* even bear a striking resemblance in form to the wood of the Gooseberry.

We graft in spring—in March or April ; in the previous summer we have a sufficient quantity of our stocks struck in small pots of the heights we want, and having removed them into a close moist house, with a supply of pieces of the thinnings of the old plants of *Epiphyllum* for scions, we take the knife and first cut off every spine and bud from the stock by commencing at top and taking a slice off each of the four corners from top to bottom, which effectually removes every spine without much ceremony, and there is never any trouble after with the stock throwing out growths ; then suppose we want to make a pyramid, we commence inserting at the bottom, and choose our largest and longest pieces of *Epiphyllum*—they may be 6 inches long, and have two or three forks or branches ; the base of the branch is neatly sharpened on both sides, wedge-shaped, then a downward slanting cut is made across the corner of the stock to a good depth in the soft flesh, and the scion is pressed in. The heavier scions are apt to fall or slip out, and must be tied with bast ; repeat the same spirally round the stock not too thickly, diminishing the size of the scions until the top is reached, inserting a small bit in it perpendicularly. When finished, the whole has the appearance of a cone. We have several nice pyramids in full bloom, which were only made in March last. There is a sticky viscous juice which exudes from both scion and stock, and which coagulates on exposure to the air, and fixes the scion like gum in a very short time. By this means a comparatively large plant in a very small pot can be quickly got up for small vases or the dinner-table. I may remark that, if the thickness of the stock be objectionable, its diameter can be reduced after the grafts have taken by paring more off the corners. Various modes of grafting, to make different-shaped plants, will readily suggest themselves. We may also remark that in growing them we have long ago abandoned the old method of using lots of lime-rubbish in the soil. The *Epiphyllum* likes a bit of

* [We have plenty of it on the *Pereskia* stock, and it suits admirably.—ED.]

good compost, like most other plants, provided it is never water-logged ; yet while growing it must have plenty of water, as the long delicate white roots, crawling over the surface in a network, and round the sides of the pot, are easily killed by drought ; on the other hand, they must be kept rather dry after growth has been formed. There are several varieties of *E. truncatum*, all of them alike worthy of cultivation, of beautiful shades of pink, violet, and white ; but we will leave their enumeration and description to any of our readers who are better acquainted with their distinctive characters than we. THE SQUIRE'S GARDENER.



THE FLOWER-GARDEN.

No. XIV.

SPRING FLOWERS.

THERE is no season of the year when flowers are so acceptable, and when they look so beautiful, as in spring. They come to us then as the advance-guard or harbingers of the coming bloom of summer, inspiring the mind with hope. The Snowdrop, the Aconite, the Crocus, and the Primrose, with their sweet companions, come battling their way through the blasts and even the snows of departing winter, and successfully assert their power to minister and their right to be ministered unto ; for in spring, above all other seasons, do flowers seem in sympathy with humanity.

It is therefore exceedingly desirable that the more systematic and careful culture and arrangement that have been so much and so well deservedly bestowed on the flowers of summer and autumn should be extended to those of spring. There exists no good reason why our gardens, in part at least, if not altogether, should not be as gay during the spring months as in summer. There may be truth in the assertion that the great rage which has long existed in favour of summer flower-gardening has cast hardy spring plants into the shade of neglect. But where families are resident in spring, it need not and should not be so. There are so many hardy herbaceous and bulbous plants and annuals—all of such very easy culture that they scarcely require a single glass erection—that to have a garden gay in spring is, as compared with the labour and resources which are needed for summer plants, an easy matter, and quite within the reach of all who have a small piece of spare ground.

In the case of those especially who are the proprietors and occupiers of villa gardens—generally business men residing a short distance

out of our great cities—there are more frequent attempts at filling up the beds with spring flowering plants than in the majority of gardens of larger extent and pretensions. But the system adopted in such places is, as a general rule, much in need of being improved. Bulbous plants, chiefly Hyacinths, Tulips, and Crocus, which are purchased annually at considerable expense, are the chief and in many cases the only plants used. The effect produced is the very essence of stiffness and formality, the variety very limited, and the display of bloom short-lived and easily tarnished with inclement weather. While there cannot well be too much said of the individual beauty of these bulbs, nor against their being used in quantity, it is principally associated with other plants that their effect is brought fully out, and the gap their short blooming season leaves behind is thoroughly met. There are scarcely any plants so beautiful as our dwarf early Tulips, Hyacinths, &c.; but they do not remain in bloom very long, and when done blooming are amongst the most mournful-looking objects imaginable.

The most effective way of securing a rich and fine display of these charming bulbs is to cover the beds with a carpet of some dwarf-growing plant, and dot them over with bulbs of contrasting colours. For carpeting in this way spring is peculiarly rich in suitable plants. To name no others than the Pansy and a few of the best spring bedding annuals, enough is afforded to serve this purpose. Such plants as these scarcely attain their full growth and bloom before the bulbs are over, especially if the carpeting is planted with a view to accommodate the bulbous plants. And they bloom and cover up the blanks caused by the faded and earlier bulbs till it is time to think of planting the summer plants. Such carpeting plants can be so much more cheaply raised than bulbs can be bought, that the bulb-display, by being planted more thinly, can be extended over a wider space. Tulips, Hyacinths, and Jonquils, &c., resting on the surface of contrasting colours, are much more beautiful than when looked at against the bare ground; whereas the mixed border affords room for individual patches of all sorts of bulbs by themselves. This is simply carrying the dotting system sometimes practised in summer flower-gardening into that of spring, when there are more reasons for doing so.

As the accompanying select list will show, the resources of spring are rich in the various shades of colour necessary for producing beautiful combinations in beds and borders, especially when these hardy perennial and bulbous plants are supported by some of the finest annuals afterwards to be enumerated. Time and space forbid doing more at present than presenting this selection; and cultural notes, &c., will form the subject of other papers.

A SELECT LIST OF HARDY PERENNIAL HERBACEOUS AND BULBOUS PLANTS SUITABLE FOR BEDS AND MIXED BORDERS IN THE SPRING GARDEN.

Those marked * are bulbous-rooted plants.

- Ajuga reptans rubra*, $\frac{1}{2}$ ft., dark foliage.
- Aubrietia deltoidea*, $\frac{1}{2}$ ft., blue; April, June.
- Aubrietia Campbellii*, $\frac{1}{2}$ ft., bluish purple; May, June.
- Aubrietia grandiflora*, $\frac{1}{2}$ ft., bluish lilac; April, June.
- Aubrietia purpurea*, $\frac{1}{2}$ ft., purple; April, June.
- Aubrietia purpurea variegata*, $\frac{1}{2}$ ft., purple; April, June.
- * *Anemone Apennina*, $\frac{3}{4}$ ft., blue; March, April.
- Anemone nemorosa flore pleno*, $\frac{3}{4}$ ft., white; March, April.
- Anemone coronaria*, $\frac{3}{4}$ to 1 ft., various; March, May.
- Anemone* (double varieties), blue; March, May.
- Anemone Azure incomparable*, $\frac{3}{4}$ to 1 ft., blue.
- Anemone Harold*.
- Anemone Josephine*, scarlet.
- Anemone Emperor*, scarlet.
- Anemone Lightning*, scarlet.
- Anemone Rose Mignonne*, rose.
- Anemone Prince de Ligne*, violet; and many others.
- Arabis albidia*, $\frac{3}{4}$ ft., white; February, May.
- Arabis mollis variegata*, $\frac{3}{4}$ ft., white, with variegated foliage; February, May.
- Arabis lucida variegata*, $\frac{3}{4}$ ft., golden foliage; February, May.
- Alyssum saxatile*, $\frac{3}{4}$ ft., yellow; April, May.
- Alyssum saxatile variegatum*, $\frac{3}{4}$ ft., yellow; April, May.
- Alyssum argenteum*, $\frac{1}{2}$ ft., yellow; April, May.
- Alyssum compactum*, $\frac{1}{2}$ ft., yellow.
- Bellis perennis* (Daisy), $\frac{1}{2}$ ft., double red, double white, double pink, prolifera, acutefolia, variegated foliage; March to July.
- * *Bulbocodium vernum*, $\frac{1}{2}$ ft., purple; March.
- Cheiranthus Cheiri* (Wallflowers), common garden varieties, 1 to $\frac{1}{2}$ ft., various; March, June.
- Double dark, red, and yellow.
- Cheiranthus alpinus*, $\frac{3}{4}$ ft., yellow; March, June.
- Cheiranthus Marshallii*, $\frac{3}{4}$ ft., yellow; April, June.
- Cheiranthus ochroleucus*, 1 ft., pale yellow; May.
- Cardamine pratensis flore pleno*, 1 ft., pale purple; April.
- Cardamine trifolia*, $\frac{3}{4}$ ft., white; March, April.
- Cerastium tomentosum*, $\frac{1}{2}$ ft., white.
- Cerastium Biebersteinii*, $\frac{1}{2}$ ft., white.
- * *Crocus* in great variety, such as—
Cloth-of-Gold, $\frac{1}{2}$ ft., yellow; March, April.
Common yellow, $\frac{1}{2}$ ft., yellow.
Cloth-of-Silver, $\frac{1}{2}$ ft., white, with purple stripes.
Gold-finder, white.
Queen Victoria, white.
Ne plus ultra, violet and white.
Sir John Franklin, purple.
David Rizzio, purple.
Prince Albert, purple.
Vulcan, pale violet.
- * *Cyclamen hederifolium*, $\frac{1}{2}$ ft., red; January, April.
- Cyclamen coum*, $\frac{1}{2}$ ft., red; January, April.
- Cyclamen vernum*, $\frac{1}{2}$ ft., red; January, April.
- Dielytra spectabilis*, $2\frac{1}{2}$ ft., rose and pale yellow; April, June.
- Dielytra spectabilis alba*, $2\frac{1}{2}$ ft., white.
- Dactylis glomerata variegata*, 1 ft., variegated foliage; March, onwards.
- * *Dodecatheon elegans*, 1 ft., rose and lilac; April, June.
- * *Dodecatheon mesadia*, $\frac{3}{4}$ ft., purple and lilac; April, June.
- * *Eranthis hyemalis*, $\frac{1}{2}$ ft., yellow; January, March.
- * *Erythronium dens canis*, $\frac{1}{2}$ ft., purple, rose, and white; March.
- * *Fritillaria imperialis*, $3\frac{1}{4}$ ft., various; April.
- Fritillaria meleagris*, $1\frac{1}{2}$ ft., various; March, April.
- Fritillaria Persica*, $1\frac{1}{2}$ ft., purple; March, April.
- Fritillaria praecox*, 1 ft., white; April.
- * *Galanthus nivalis* (Snowdrop), $\frac{1}{2}$ ft., white, double, and single; January, March.
- Gentiana acaulis*, $\frac{1}{2}$ ft., blue; April, June.
- Gentiana verna*, $\frac{1}{2}$ ft., blue; April, May.
- Helleborus niger*, 1 ft., pink; January, March.
- Hepatica triloba*: Single and double

- blue, red, white, pink, $\frac{1}{2}$ ft.; February, April.
- * *Hyacinths* in great variety; April, May.
 - Iberis sempervirens*, $\frac{3}{4}$ ft., white; March, May.
 - Iberis saxatilis*, $\frac{3}{4}$ ft., white; April, May.
 - Iris*, various; May.
 - * *Jonquils* (double and single), 1 ft., yellow; April, May.
 - Muscari botryoides*, $\frac{3}{4}$ ft., blue; March, April.
 - Muscari moschatum*, $\frac{3}{4}$ ft., blue and yellow; April, May.
 - Muscari monastrosium*, 1 ft., blue; April, May.
 - * *Narcissus albus plenus odoratus*, 1 to $1\frac{1}{2}$ ft., white; March, May.
 - Narcissus bulbocodium*, $\frac{3}{4}$ ft., yellow; April, May.
 - Narcissus Incomparable*, 1 ft., white and orange; April, May.
 - Narcissus Orange Phoenix*, 1 ft., orange; April, May.
 - Narcissus poeticus*, 1 ft., white; May.
 - Narcissus biflorus*, 1 ft., white; May.
 - Narcissus pseudo Narcissus*, 1 ft., yellow; March, April.
 - Narcissus Polyanthus* (in variety).
 - * *Ornithogalum umbellatum*, $\frac{3}{4}$ ft., white; April.
 - Omphalodes verna*, $\frac{1}{2}$ ft., blue; March, April.
 - Primula vulgaris*: Double and single white, crimson, lilac, purple, sulphur; March, April.
 - Primula auricula alpina*, $\frac{1}{2}$ ft., various; March, May.
 - Polyanthus Giant*, 1 ft., various; March, May.
 - Polyanthus* (garden varieties), $\frac{3}{4}$ ft., various; March, May.
 - Saxifraga granulata pleno*, $\frac{3}{4}$ ft., white; March, May.
 - Saxifraga umbrosa*.
 - Sempervivum Californicum*, $\frac{1}{2}$ ft., green leaves tipped with brown.
 - Santolina incana*, $\frac{1}{2}$ to 1 ft., grey foliage.
 - Sage*, variegated.
 - * *Scilla Siberica*, $\frac{1}{2}$ ft., blue; March, April.
 - Scilla præcox*, $\frac{1}{2}$ ft., blue; March, April.
 - Scilla verna*, $\frac{1}{2}$ ft., blue and white; March, April.
 - Scilla Peruviana*, 1 ft., blue; May.
 - Scilla Peruviana alba*, 1 ft., white.
 - Scilla amœna*, $\frac{1}{2}$ blue; March, April.
 - Scilla Italica*, $\frac{3}{4}$ blue; March, April.
 - Stocks*, intermediate: Scarlet, white, purple, 1 to $1\frac{1}{2}$; April; onwards.
 - * *Triteleja uniflora*, 1 ft., blue, shade white; April.
 - * *Tulip*, dwarf early varieties, such as—
 Cloth-of-Gold, $\frac{1}{2}$ to 1, yellow; April, May.
 Crimson King, crimson.
 Czar, scarlet.
 Fireball, crimson.
 Prince of Orange, orange.
 Queen Victoria, white.
 Rosamundi, rose.
 Violet Gem, purple.
 White Eagle, white.
 Duke of York, crimson.
 Rex rubrorum, crimson.
 Tourneol, scarlet and yellow; and many others.
 - Viola tricolor* (Pansy), blue, purple, white and yellow, $\frac{1}{2}$ to $\frac{3}{4}$ ft.; February, June.
 - Viola cornuta*, $\frac{1}{2}$ ft., purple; April, June.

CULTURE OF THE CHRYSANTHEMUM.

(Continued from page 81.)

It has often occurred to me, when watching the stream of visitors pressing into some floral display, to note what proved most attractive to the pleasure-seeking throng; and I have invariably witnessed that, after a passing glance bestowed upon the many plants of various sorts which embellished the hall or tent, the great centres of attraction were the cut flowers and fruit. Like a swarm of bees surrounding their queen, the public always gather round stands of Pansies,

Dahlias, Pinks, and Carnations. Roses, &c., or a few well-grown bunches of Grapes, will command more attention than a fine collection of plants. Not the least attractive to all visitors are cut blooms of Chrysanthemums; and their beauties are the theme of much comment, even by those who are ignorant of their name. At the last exhibition here this was patent to all: the stands were never without a knot of eager gazers; and this being the case, a few remarks on the special culture of plants intended to produce these remarkable blooms will not be out of place, especially following the list of varieties published in last month's 'Gardener.' Primarily, it must be remembered that for the exhibition-stand incurved flowers are the only varieties considered eligible, reflexed sorts being passed over by the censors as not approaching the points desired in a good flower. This, to many who have anxiously watched their flowers expanding, and have staged them, full of hope that their size would place them first, seems a hardship, as it did to me when, four years ago, I staged a fine lot of blooms, half reflexed, the remainder incurved, and found them beaten by all incurved varieties not more than half the size of mine. These incurved flowers are held by all florists to approach nearest to perfection, the standard of excellence being smoothness and substance of petals, size, symmetry of outline, and depth of flower, which, to be perfect, should be two-thirds of a globe, and it is satisfactory to find so many varieties assuming this form.

The largest blooms, I find, are obtained from cuttings or suckers struck in February, receiving in the early stages of their growth the same soil and treatment as specimens, except that the leader must not be pinched out, but should be preserved intact from the time of striking until the buds appear; but all laterals should be rubbed off—this concentrates the entire vigour of the plant in the stem. About the middle of May they should be shifted into the blooming-pots, and placed in the open air in a southern aspect, plunged in soil or ashes, and set so that one will not shade the other. This will help them to mature the wood, for unless it is well ripened fine blooms cannot be insured. I use iron hurdles, as they are not liable to sway or move, and so break the plants; but where these are not handy, recourse must be had to stout stakes, the plant being carefully tied up as the growth advances. This will guard them against accidents from wind or other causes. The same care will be required in watering, syringing, &c., as is necessary for specimens, details of which I purpose giving hereafter. In August the crown will branch into three or four leaders; these should all be taken off but two. Flower-buds will soon appear at the extremity of each branch, and as soon as they are large

enough to handle disbudding must take place, care being taken to remove all buds except the centre one, unless (as sometimes happens) this should be deformed, when it must be removed and the strongest of the side ones left. A watchful eye must be kept on the buds until they begin to expand, when the plants should be housed and treated as the specimens.

As many have not convenience for housing plants for this purpose, they will be glad to learn that equally fine blooms may be grown outside in a south border, provided they have the means of sheltering the plants when they are in flower by a covering of canvass or tiffany. In arranging the plants when grown in this way, or when grown in pots, the strongest grown should be placed at the back, and the dwarf compact sorts in the front rows, giving them the same general treatment as recommended for plants grown in pots. With what great success they may be grown in this manner is well exemplified by the grand display produced each November in the Temple Gardens, London, where, amidst the smoke of Fleet Street, the labours of Messrs Broome & Dale have caused these hitherto neglected gardens to be resplendent with dense masses of beautiful flowers; in fact, the Chrysanthemums at the Temple Gardens have now become one of the institutions of London. Thousands turn out of perhaps the busiest street in this world, pass through the gateway once trod by the old Knights Templars, down to the garden overlooking the river, and there for a brief space linger amid some of the most beautiful of Flora's gifts—the last flowers of the year; and none can go back to the toils of business or the cares of pleasure-seeking without “considering the Lilies how they grow,” and feeling refreshed by being brought into contact with nature's works. All honour, then, to these gentlemen who, seizing upon this plant introduced from the far East, have by intelligent culture produced such splendid results! for when the plants of our own land have passed into the “sere and yellow leaf” of winter, they are just unfolding their florets and developing their beauty. And should the Chinese see the progeny of their species, doubtless they would be surprised at the skill of the “outer barbarians,” as they are pleased to name us, which has produced such extraordinary changes.

When the flowers are expanded, and the grower is about to select those he intends to exhibit, it will be found that some of the newer varieties assume the model shape, others are partially incurved and globular, and some of the best are quite out of the required shape; and while not advocating the “dressing” of flowers as a rule, I must claim exemption for the Chrysanthemum, as I do not think they are ever shown as cut from the plant. Some few require the

eye or centre of the flower to be drawn out with a pair of tweezers, and many more require the aid of another pair of tweezers, one tang of which is grooved and the other round, fitting into it; these are made of ivory or bone, and are used by commencing with the inner row of petals, drawing the instrument up each, bending the petal gracefully towards the centre of the flower; each succeeding row is managed in the same manner, the petals being arranged over one another like tiles on a roof. When the flower is finished only the *backs* of the petals are seen—the flower is all one colour; and as there is a great difference between the colours of the front and back of the petals, many sorts when so managed would scarcely be recognised, so great is the improvement, and many flowers which would be thrown aside become beautiful when “dressed.” I cannot see any objection to this kind of “dressing,” especially when the same varieties may generally be seen in their natural shape and colour upon the specimen plants exhibited. It is assisting nature; and the sole objection in my mind is that many purchasers who buy the sorts on the exhibition-stands are often disappointed in the colour and size of their purchases, especially when they are not well grown, or deficient in a little arrangement of their petals.

THOMAS HIGNETT.

(*To be continued.*)



OUR SOCIETY.

No matter what its title, or where we hail from, suffice it to say that we are a Society, and that of amateur horticulturists, and that it is our practice to meet early in the New Year, to listen to an address from our President. No matter his name, or age, or standing; he *is* one of us—a clever horticulturist, and a real man. He is not unknown to many of the “brotherhood of gardeners,” who the country through grasp hands in that all-embracing communion which an identity of interests forms and cements; and are thus as much one in spirit as if in daily intercourse the one with the other. He has authority to speak—the authority of experience and position—and his utterances have the weight which belongs to all men who are mentally and morally above the ordinary type of the human species about them.

His address is always an exposition of the practice he adopts with any particular flower he cultivates, and on this occasion he gave us his experience of the “Hyacinth as cultivated in glasses.” He had specimens with him, plants of singularly healthy development—strong, lusty, and indicative of coming flowers as fine as could be wished for.

"In a peculiar manner," he said, "do I appreciate these subjects," alluding to his Hyacinths. "They are to me a veritable garden within doors : in them I see reproduced, in some part, what has passed away on the one side ; and they are also prophetic to me of what will soon be coming in on the other. I am so fond of flowers, that their presence has become indispensable to my existence. I have tended them for forty years, and year by year, as I draw nearer and nearer to the end, they become more and more endeared to me. What so

'Sweet as breathing flowers,
That ope to greet the earlier hours ;
Never-ending,
Incense sending
Up, to bless their parent rays !'

And in a song of praise, as 'holy as the night,' I praise Him who gave us

'Breeze, and bloom, and star'

in such wondrous profusion and endless variety.

"At the outset of the detail of my experience with the Hyacinth, I may say that I find myself at issue with some of our leading bulb-dealers as to the time when they recommend that Hyacinths should be placed in glasses. The time they mention—generally the end of September or early in October—is six weeks too early, in my opinion. Not that I am against obtaining bulbs early, as I always endeavour to obtain the first pick at the dealers, and then I transfer them to a dry, cool, airy shelf ; and when the rootlets that spring from the base of the bulbs begin to swell as if desirous of being put forth to enter on their special work, then they are placed in the glasses, and set to the performance of their task. Meanwhile, the glasses—and I always use what is known as Tye's Registered Glass—have been thoroughly cleansed, and some charcoal obtained and broken into pieces that will drop easily into the glass. With clear rain water—fresh water that has recently fallen—the glasses are filled quite up to the base of the bulb destined to occupy the glass, and into it is dropped about six pieces of the charcoal, and they then occupy any places that will contain them on the furniture about the sitting-room. To keep the bulbs cleansed from any dust that may settle on them, and to keep the growing roots submerged in the water by keeping it filled up as evaporation takes place, is all the active duties required of the cultivator at this stage. To tend them in this wise—so to watch the gradual development of the roots in one direction, and the ascending shoot in another—is a task so pleasant, that I am compelled to make it a part of my daily occupation. Sometimes the charcoal will sink to the bottom, sometimes float near the surface ; and in the latter case, I

have often been deeply interested in watching by what sure and unerring process the roots are attracted to and grasp the charcoal lying by their path.

"I have never yet changed the water in any one glass ; I do not think I shall need to do so. In each of my sixteen glasses the water is free from any disagreeable smell, and the roots are strong, healthily developed, and suggestive of general wellbeing.

"Observe how strong and dark-green the shoots look, for just now they are occupying a small table close to the window, as well as the window-sill. Air is given on all dry genial days, but I do not expose them to cold draughts. As far as it can be done, an equable temperature about them should be maintained.

"Such a thing has occurred with me of the water in a glass becoming disagreeable—so much so as to emit a very offensive odour. If, within a few weeks after the bulb has occupied the glass, this discovery is made, and the rootlets are of a soft pulpy subsistence—a not uncommon occurrence with those who do not adopt an intelligent system of cultivation—I immediately clear away the roots from the base of the bulb, cleanse it thoroughly in warm water, and the glass also, fill it with fresh water, and again insert the bulb, and place it in the dark, to induce a fresh effort at root-formation. The glass must be examined occasionally, to ascertain if the water is becoming putrid. In the case of some varieties, when this unwelcome tendency to so decay at the roots once sets in it is incurable ; in the case of others entire convalescence will result. If the flower-spike, however, has begun to develop, and this disease lays hold of the rootlets, it is past all aid, and a premature spike will be certain to result.

"By the beginning of February the Hyacinths will make rapid progress, should some warm sunny weather set in. By the time the shoots are from two to three inches in height I have begun to fill the glasses with water to their very rims, so that the bulbs are almost entirely covered with it. They are examined daily, so that the moisture that has evaporated is at once supplied. The temperature of the fresh water supplied is *always* above that already in the glass.

"A small piece of sponge can be used to cleanse the foliage twice or thrice a-week. I firmly believe that the plants derive great benefit from this aqueous application to their foliage.

"All aids from chemicals or artificial manures I steadfastly ignore. They may assist, if rightly and judiciously applied, but the grower will be more likely to destroy his flowers than to do them good service. I can get very fine flowers without their aid, and I think it wise to let well alone.

"I do not venture to commend sorts, but I am growing this season

Baron van Tuyll and Mimosa, dark blues (some say that the former is not suited for a glass, but I always succeed well with it); Grand Lilas and Couronne de Celle, light blues; Cavaignac, Macaulay, Le Prophète, and L'Étincéllante, shades of red—the last a fine dark variety; Mrs James Cutbush, Mont Blanc, and Alba Maxima, pure white—the former a very fine new kind; Grandeur à Merveille, and Anna Paulowna, blush white—the last a fine single form of the old double-blush variety, Groot Vorst; and Ida, yellow, one of the very best in this section of colours. The foregoing are all single flowers. With one or two exceptions, I prefer always to grow single varieties in water. The exceptions are Lord Wellington, a fine double-blush variety, very easy to cultivate in a glass, and the old pale double-blue, Bloksberg. I incline to the opinion that to grow double Hyacinths well, they should be in rich soil, in pots. I have tried many single flowers, with a view to test their adaptability for cultivation in glasses, and rarely have I failed. Sorts that have been condemned as having stubborn, unbending characters, I have found to be extremely docile and tractable. It is not a question of kind—it is a question of cultivation; and the most successful grower is the one that is most attentive to the small details of the cultivable process that goes to form the sum of success.

“I have now done. I have sought to make the matter of my topic suggestive, rather than exhaustive. It is my desire, as it was my intention at the outset, to sketch a kind of outline of my mode of cultivation, leaving each person who may be incited to attempt the cultivation of the Hyacinth in glasses, to fill in for himself what is necessary to make it a complete and coherent whole. It is an occupation as pleasurable as it is elevating, for he that loves flowers will assuredly be a lover of his kind. It opens up a world of beautiful forms, pure thoughts, high aspirations—all of which are in harmony with the high nature he possesses. Thus, to a gardener every day may be made to bring its special interests. In the breadth of his sphere of operations “there is always something worthy of his care and admiration, some new development of beauty, some fresh design to execute, some lesson to learn, some genial work to do.” In the active and loving discharge of these, pure air is brought to the lungs, and pure reverent thoughts to the heart:—

“High and infinite desires,
Flaming like those upper fires.”

Mark the importance by comparison attaching to the ensigns of our craft in the inevitable fraternity of death:—

“The glories of our mortal state
Are shadows, not substantial things;

There is no armour against fate,
Death lays his icy hand on kings ;
Sceptre and crown
Must tumble down,
And in the dust be equal made
With the poor crooked scythe and spade :
Only the actions of the just
Smell sweet and blossom in the dust."

R. D.



THE FRENCH MODE OF PRODUCING SALADS IN THE WINTER MONTHS.

(Continued from page 16.)

THE advantages of this bell-glass over the hand-light of British gardens are great. It commands the greatest amount of light, has no drip, and requires no repairs. Rubbed with a wad of hay, and swilled in a tank of water once a-year, is all the labour they demand for outdoor purposes. Under these, then, and with the assistance of litter and leaves, or separately as may be at disposal, the fine Cos Lettuces seen in the Halles of Paris and vegetable-markets of London, in the early spring months, are produced. It cannot be true that as fine can be produced in span-roofed orchard-houses, for I believe the planterman could as well grow *Anætochiluses* to perfection in the open air of an orchid-house. In narrow brick pits planted close to the glass, tolerable Lettuces are produced in many a British garden, but they are far inferior to those produced under the bell-glass just described. If any one appliance more than another, belonging to French gardens, deserves copying, it is this useful bell-glass, for without this it may be affirmed that fine Cos Lettuces would indeed be scarce in the winter and spring months.

Southerly well-exposed sites, having light sandy soil, are generally chosen for the plantations that are intended for the October, November, December, and January supply. They are heavily manured, dug, and lined in beds sufficiently wide to contain three rows of bell-glasses. Healthy robust plants that have been raised previously, by sowing a packet of seed at fortnightly intervals, are selected and planted in these prepared beds in trebles. The first planting is done in September to furnish the supply for October, and if the weather is favourable, the glasses are not required to be put on in either of these months, but the October plantation will require covering in November; and the November plantation, it will not only be necessary to cover in December, but the leaves or litter will have to be brought

into use, and shaken between the rows of bell-glasses more or less according to the state of the weather. Covering them half up, I find, effectually secures the ground from freezing under the bell-glasses with 20° of frost; and so long as the earth is not frozen, the young Salads grow, and it is astonishing what progress they make under them. As has been said, they are planted in threes; but for the spring months, only one is planted under each bell-glass, as the increased progress they make demands, of course, more space. The site of the plantation to furnish the supply in February and March is a portion of the last year's hot-bed, which, thoroughly rotten as the leaves and dung are, is levelled, forked over a few inches in depth, lined off in beds as for the others, and a single plant, instead of three, allowed to each bell-glass. In planting, a hole is made as large as a pint mug, and filled with light soil, and in this the young Salad is inserted. Some sow a few seeds of Carrot at the same time; and when large enough, they are thinned to 4 or 5, as the case may be: the Salad itself is cut before these arrive to any inconvenient size. The young plants for this plantation have been previously raised in a frame on a portion of this old hot-bed, from seed sown in December, and carefully thinned by transplantation into other frames; and by the time they are wanted, they are strong and robust; and by carefully lifting with a trowel, very little check is given to their roots in planting. No water is given unless the weather is unusually dry, as the moist rotten dung around the roots is quite sufficient to moisten the soil: protection with new leaves or litter is resorted to in this case, also using more or less as the state of the weather demands. For the sake of tidiness, straw mats may be used instead of leaves, or any other covering best suited to the requirements of the garden; for ourselves, we use the latter made of rye-straw and strong string; and when well made, they last two seasons. These, 8 feet by 5 feet, cost 9d. each, including labour in making. The April supply of Lettuces is provided in the following manner:—A well prepared piece of ground is covered with 2 inches of rotten leaves from the old hot-bed, in the month of October: the smallest of the young plants are planted in beds, as in the other cases, but singly and 9 inches apart either way. These tiny Salads struggle on through the winter months unprotected, save with the surfacing of rotten manure, till the days get longer and the sun brighter, when they improve rapidly in appearance and grow amazingly. In the beginning of March, a bell-glass is placed over every other one, and in a very short time they are as big as the glasses themselves. As fast as they are cut the bell-glasses are placed over the remainder, which tends to keep up the succession till the ordinary supplies come in. At this period the glasses are tilted to admit air as the sun now becomes

strong ; but in the earlier periods no air is given, unless in such weather to avoid damp : water is never given, as it is found that the condensed moisture on the inside, instead of falling on the Salad, trickles down the sides of the glass, and with the ordinary spring showers is found sufficient. The Paris White Cos Lettuce is the best sort for the winter supply. For the spring the Cabbage-Lettuce is chiefly used ; one excellent variety in particular is in great demand. It is an immense Lettuce when fully grown, and of a light green colour, with the tips of the leaves tinged with rose. This variety is commonly seen 18 inches in diameter and 9 inches in depth. The culture of the Endive and other Salads must form the subject of a future paper.

H. KNIGHT.



CHRYSANTHEMUM CULTURE.

THAT the Chrysanthemum is now become a favourite among the floricultural public there cannot be any doubt—and deservedly so, for I know of no plant that will more amply repay them for the attention bestowed upon it than this gay autumnal flower. The variety of colour, size, form, and the long period it remains in bloom, and also its suitableness for conservatory decoration and for exhibition, make it the most useful of all flowers during the dull dark season of the year.

I quite agree with all Mr Hignett has written respecting the cultivation of this flower for specimens for exhibition, but my practice differs from his in the growing of it for large blooms. Not that I condemn his mode of culture when the object of the grower is to obtain large blooms, only I find that as large flowers are to be had by stopping and keeping the plants lower, as by the long-legged system more generally resorted to, and recommended by Mr Hignett.

That excellent grower says strong cuttings should be selected ; and I invariably find that stronger cuttings are to be had in March than in February, and this is the month I find best suited for striking the cuttings for blooms. I generally place six strong cuttings in a 6-inch pot, and then plunge the pots in old tan on a half-spent dung-bed, with a frame placed over it. When the cuttings have rooted firmly, I take out their centres, the cuttings still remaining in the pots until they have made an inch of growth. I then select the best plants, and pot them singly, using the same size of pots. They are then placed in a frame, and kept close for a few days. When the laterals have made four joints, I again stop them. After this second stopping they are transferred to their blooming-pots. By stopping them I get plants with eight or ten side-shoots, and from each shoot one to three flowers ;

of those I allow three to expand on one shoot. They have a branching habit when showing their flower-buds. As a rule, those that have this habit should have their centre flower-buds taken out; for if left, they expand their flowers beneath the others. Besides, they weaken these upper blooms very much if suffered to remain, and they are often hid by the foliage. In all cases disbudding should be resorted to more or less; even the Pompon varieties are benefited by it. It should be carefully performed even by a practised hand, and at the right time.—*i.e.*, when the buds are the size of small Peas. The Chrysanthemum should be grown full in the sun, in an open situation, the pots being plunged in the ground to keep the root cool, and to prevent evaporation. By plunging the pots, you prevent the winds blowing the plants over, which is almost sure to injure them more or less. The soil recommended by Mr Hignett cannot well be improved, except by the addition of bone-dust, which I find very beneficial in growing the large varieties.

We grow upwards of 400 plants in pots, which represent about 150 varieties. One-half of these are grown for their large blooms. At no time does the conservatory look better than when filled with this beautiful autumn flower.

Out of the sixty varieties named by Mr Hignett as being best adapted to grow for blooms, I have forty-five, and two are not incurred at all—*viz.*, Annie Salter and Alma—though they make splendid show flowers. To Mr Hignett's long list let me add Albert Helyer, large purple, finely incurved; John Salter, red cinnamon, large and globular, incurved; La Belle Blonde, white, incurved; Lady St Clair, large white, finely incurved; Little Harry, golden amber, one of the finest incurved varieties; Mr Kaines, creamy blush, splendid form; Novelty, large blush, with long petals, incurved; Pomona, orange fawn, late, incurved; Talbot, rose purple-tipped blush, very distinctly incurved; Yellow Perfection, splendid form and colour, incurved. Anemone varieties: Fleur de Marie, the best of all Anemones; Gluck, fine yellow; Empress, large lilac, high centre; Mrs Pethers, rose lilac. By growing the summer varieties, the Chrysanthemum may be had in flower six months out of twelve. These early varieties will prove very useful where a constant supply of bloom is required for conservatory decoration. I have had the Chrysanthemum in bloom since August 5, and I have now a fair show.

ROBERT OWEN,

Gardener to G. C. Schwabe, Esq.,
Broughton, Liverpool.

[We are extremely gratified to have papers on the Chrysanthemum from two such growers as Messrs Hignett and Owen, and specially so to find that they are so nearly agreed on all the points of their culture.—ED.]

HINTS FOR AMATEURS.—FEBRUARY.

At this season a general arrangement of how the vegetable-garden is to be cropped during the year should be made—changing the crops as much as possible from what they were last. This is the more necessary where the garden is small in proportion to the demand. The position of winter crops should be chosen, keeping them as much together as possible; and, to economise ground, let spaces be allowed for single rows of Peas, dividing off plots of ground to be cropped between. The Peas bear doubly compared with the system of huddling the rows close together. Keep summer and autumn crops by themselves, and keep sheltered borders in reserve for successions of early and less tender crops. Ground from which Celery has been dug makes a good preparation for deep-rooting vegetables, such as Onions and Parsnips. Both of these crops may be sown at the end of the month if the soil and weather will allow. If the ground is dug or trenched up roughly to the weather, and on a dry morning gone over with a fork, making the surface fine, in the afternoon of the same day the whole surface may be trodden down and levelled, and drills drawn; then sow the seed, covering in the dry soil; tread well, and finish with a rake, drawing it the way the drills run, not to disturb the seed. If Onions are treated thus favourably, and the seed can be relied on, we never fear having a crop. When seeds are sown on wet heavy ground which has been lying sour all through the winter, it is hardly possible they can grow, and the seedsman is often blamed for bad seeds which have been destroyed by the cultivator. If the ground is of a nature that a mellow surface cannot be made, it is well to prepare fine dry earth, charcoal-dust, or wood-ashes, to cover small seeds in the drills. We often use old dry mushroom-dung sifted and mixed with soot for very early crops of tender vegetables. For Onions, drills 9 inches apart and $1\frac{1}{2}$ to 2 inches deep will answer well; a row left out every 6 feet apart will allow room to get in to clean and hoe the crop without breaking them. *Danver's Yellow*, *James's Keeping*, or *Brown Globe* are our favourites, having tried a dozen kinds together last season; and a packet of *Nuneham Park* had our best attention, but was not equal to those named. To get this or any other variety extra large, the seed might be sown very early in boxes under cover, and the plants planted out in extra-prepared ground; but as we get the *Brown Globe* and *James's Keeping* in favourable seasons to average 13 or 14 inches round, we feel contented: size is of little value if the bulbs are not well ripened before storing. Parsnips may be treated the same as Onions, but keeping the rows 14 to 16 inches apart: the ground need not be made so firm as for the former. *Hollow Crown* and *Student*

are the only two kinds we have grown ; the difference in their appearance is scarcely perceptible. Peas, to succeed the earliest crop, may be sown as soon as the ground is in order. Good second crops are Dickson's Favourite and Laxton's Prolific. Champion of England for general crop is still one of the best. The Prince is an excellent flavoured Pea. Veitch's Perfection is also of first-rate quality, and when not sown too thickly is a good cropper. For last crop, British Queen and Ne plus Ultra were excellent and plentiful with us last season till they were destroyed by frost. Strong-growing kinds sown thickly become useless in damp weather. Broad Beans may now be sown for a full crop, 2 feet to 3 feet between the rows, and 2 inches to 3 inches in the rows. They require strong deep rich soil. Early Long Pod and Broad Windsor are two of the best kinds : Royal Dwarf is useful for filling up small spaces. A pinch of Leek-seed may be sown on a sheltered border. Aytoun's Giant we have grown two seasons beside Henry's Prize, and find them exactly the same : it is an excellent hardy Leek. True Scotch is a general favourite, but not so large as Aytoun's Giant. Main sowing may be sown in deep drills and slightly covered, and when fit to handle, thinned out, leaving the strongest plants about 8 inches apart—that is, if the ground has been liberally manured. Ground for Leeks can hardly be too rich and deep. A row of curled Parsley may be sown on an early border. If the old plants have been closely picked during the winter, a few boxfuls may be lifted and placed under cover (heat if at command), which will keep up a moderate supply till the season is farther advanced. A pinch of Cauliflower, Cabbage, Lettuce, Radish, and Carrot seed may be sown on an early protected border or ridge facing the south ; if in a frame with a little heat, so much the better. Soil must be finely prepared, and protection of some kind given in severe weather. Early London is one of the earliest Cauliflowers. Wood's Early Frame and Olive-shaped are two of the best early Radishes. Early York is one of the best early Cabbages. Early Shorthorn is used for a first crop of Carrots. If Tomatoes are expected by midsummer, they should be sown now in heat in a pan, using light soil and slightly covering the seed. Prick them off in small pots as soon as they can be handled, and grow on, giving plenty of light and increasing air as the plants become large. They should be shifted from size to size of pots as their roots appear through the soil. When they become as large as there is room for them, allow them to fill the pots with roots, gradually hardening them till they can be taken out to their bearing quarters. We like to grow a quantity in large pots and take them inside late in the season to keep up a supply till Christmas. A pinch of early white Celery may be sown in a pan the same as Tomatoes and pricked off in boxes, giv-

ing plenty of light and air when the plants begin to grow. Cucumbers for planting out in March may be sown soon: the stronger the plants when they are planted out, the better they are likely to bear. For a general supply of well-flavoured useful kinds, among many we have found none to surpass Lord Kenyon's and Cuthill's Highland Mary—the first for the earliest, and the latter for free bearing and hardiness of constitution. In an ordinary dung-bed last season we cut Highland Mary in great abundance from the end of March till the third week of November. Sheppard's Wonder is an excellent long one. Cucumbers require a temperature of from 65° to 75°, allowing a rise of 10° or 15° with solar heat. Give moisture in proportion to heat, and fresh air daily if possible. Onions (if the autumn sown are not plentiful) may be planted out for dividing. Chives are often used as a substitute. It is well to have them in the collection of herbs. They may now be divided and planted. Garlic and Shallots may now be planted on ridges a few inches above the level ground. Let the bulbs be divided and gently pressed in the soil. Early Potatoes may be planted in an early sheltered spot, to be protected with glass, hoops and mats, or hurdles covered with straw. Old Ashleaf Kidney, Mona's Pride, Smith's Early, Fortyfold, and Dalmahoy are among the best garden sorts which have been well proved. Milky White and several other kinds are excellent, but we are not sufficiently acquainted with them to state their merits. It is well for amateurs to try these new Potatoes beside others of older date before they place full confidence in advertisements.

The planting of fruit-trees may still be done, if not finished in autumn. We have planted as late as April with moderate success, but autumn is the best season for planting. If pruning of trees and bushes has not been done before this it should be proceeded with, except where birds are troublesome, then leaving it late is the least of two evils. It is a common practice to paint fruit-trees with a mixture of lime, soot, sulphur, and other things, to keep insects from doing mischief; but as it is unsightly, and takes up much time, it is easier to place a quantity of fresh lime in a tub and thoroughly well stir it; allow it to settle, and pour off the clear water and add a quantity of soft-soap and sulphur; well mix the whole, and apply it with the syringe over the whole surface of the trees and into every crevice of the walls, which will keep depredators in check.

Moss-covered lawns, if objectionable, may be topdressed with a quantity of lime and fresh soil or decomposed manure, and allowed to remain for a few weeks, then well broken and raked smooth. If the grass is thin, a quantity of lawn-grass may be sown about the beginning of April, and keep the lawn well rolled after the grass begins to grow. We find *Poa annua*

very useful for covering spaces under trees. The fact of its being a troublesome weed insures its growth in any position. We have seen a green carpet of this grass during winter in the London squares when not a green blade of anything else was to be seen. Turf may be laid at any time in moist weather ; but it is well not to delay too late in the season, as it may take up much time watering it when many other things should be attended to. When laying, make the surface smooth, and fit in the new turf, beating it level. Dry, coarse, dead grass will soon disappear when fresh growth commences.

If Coniferæ or shrubs were not planted in autumn, it may be done as soon as the weather will permit. Keep good balls on large shrubs, and when planting them make holes much larger than the mass of roots, so that plenty of good loam may be placed round them if necessary. Finish with a good mulching of rotten leaves, or something similar, to act as protection from frost and from drought. A good soaking of water may be necessary if drought should set in, but it is an injurious practice to give repeated dribblings. Where the ground can be deeply trenched for new plantations of trees or shrubs, it will tell effectively on their vigorous growth. In damp heavy soil trees should be planted well above the level, allowing the soil to fall from the stem of the plants, though in dry sandy positions the opposite treatment would be beneficial. The system of digging down fallen leaves among shrubs is often practised, but it should only be done where there is a good depth of soil over the roots, as they would be much injured. Where the roots are near the surface it is a good practice to spread quantities of fallen leaves over the surface, and a coating of clean soil spread over to keep them in their place. We have many acres of shrubs and Coniferæ growing with great vigour on sandy banks. The leaves which fall annually are allowed to decay over their roots, otherwise the plants would not live. Hollies, Rhododendrons, Yews, and Laurels do well with this mulching.

Flower-beds and borders, if not already renewed with manure or fresh soil, should be attended to without delay, digging or trenching them up roughly to sweeten. They can be in a few weeks forked over, breaking them well, preparing the soil for their summer occupants. Finish all kinds of renovations and improvements without delay, as spring will bring its own work. Auriculas may now be overhauled, clearing the surface of bad or wasted soil. Examine the drainage, and make it clear ; avoid injuring the roots. Topdress with a little good loam (turfy, if possible) and cow-dung well mixed, and add coarse sand to keep the soil porous. Leave enough room to hold water when required, little of which will do at this season. Give abundance of air, avoiding damp and frost. Pinks, Carnations, and Picotees in

frames will require similar treatment. Prepare for them a quantity of loam, rotten manure, and enough of sand to keep it open for giving a fresh pot to these next month. Let the loam be thoroughly examined with the hand for wireworms, which are great enemies to these plants. Pieces of Carrots placed in the soil make good traps. In severe weather all bulbs will require protection, either with litter, fern, coal-ashes, &c., but this must be taken off when the weather is fine. *Ranunculus* and *Anemones* may be planted for summer blooming. They do well in rich cool soil (the fresher the better), but wet must not remain about the roots. They may be planted in rows, and covered with 2 inches of soil, keeping each tuber 4 to 6 inches apart. They enjoy good soakings of manure water in very dry weather. A few of the early-blooming *Roses* may now be pruned, cutting weakly ones well back, and allowing the long strong shoots to remain a good length for pegging down—a good practice where a mass of flowers is wanted; but the general pruning may be left till the middle of March or even April. We pruned our latest lot last year in the beginning of May (the season was late), and we never saw finer blooms, which were plentiful till December. Plants for flowering in beds and borders—such as *Verbenas*, *Geraniums*, and *Calceolarias*—may be propagated with all speed. Cuttings taken off plants which have been in heat root freely, and are easier managed than hard ones taken off in cool structures. Use plenty of broken pots, &c., for drainage for the cutting-pans, and very sandy soil. The heat from a well-sweetened dung-bed answers well, but steam must not be confined. Pot the cuttings one or two in a small pot, and grow them on till they are well rooted, and harden them by degrees. Keep all plants in cool structures well aired in favourable weather, and use water with the cold air off it. Use no more fire-heat than will keep out frost and damp. M. T.



FRENCH AND ENGLISH GARDENING.

TO THE EDITOR OF THE GARDENER.

SIR,—Permit me to make some comment upon an article of yours on this subject in your January number. I have had as many opportunities of knowing what English, Irish, and Scotch gardeners can do as well as any man of my age, and I have spent some nine months in daily visiting French gardens of every kind. I investigated the subject solely with a view to make known among the horticulturists of the British Isles anything worthy that was practised in the gardens of France. I did it under peculiar difficulties—without assistance from any individual or body. I have awakened public attention to the matter in the highest journal in the land, as well as in all our horticultural papers, and it is admitted, even by those who most opposed me, that some of the matters to which I have

called the attention of the public are of the greatest importance. Now I do not want thanks for this, but I hope to have a fair hearing, and I think your statement of the case as unfair as that of those who have attacked me point-blank, and endeavoured to controvert my statements, thereby only succeeding effectively in one thing—proving their own ignorance of the matter on which they had been accepted as almost infallible. I am the more surprised in your case when I consider what capital opportunities you have had of finding that something about French gardening was worth printing. At least so your readers must have thought from reading the excellent letters of your Paris correspondent. You give what purports to be a fair statement of the relative merit of French and English gardeners, and the best thing you have to say on the foreign side is that the French cottagers excel in the management of Pear-trees, but then you doubt if the Frenchman be better off with his Pears, &c., than the Englishman with his Potatoes and Cabbage. I was not before aware that cultivating Asparagus, Pears, &c., interfered with the Frenchman enjoying to some extent his Potatoes and Cabbage also; but even if it did, that would be no reason why we should not teach the British cottager to make a nice little avenue of Pear-trees from his door to his gate, and without interfering with his Potatoes or Cabbage. Nor has the British cultivator yet begun to embellish his walls with *Solanum Tuberosum* so far as I have seen. Previous to reading your article I thought nobody but a Lord Dundreary would doubt the utility of encouraging a *variety* of useful products in humble gardens, no more than any would doubt that our gardens and pleasure-grounds are richer and better now than they were when a few native trees and shrubs were all that embellished the dreary landscape. You aver that the Englishman is as well-off with his Potatoes, Cabbages, &c., as the Frenchman is with his Pears, Asparagus, &c. I shall not discuss this point with you, but simply insert this note from Mr Knight, your correspondent.

"It is a notable fact that every Frenchman eats at least a bushel of fruit a year, while it is as notable that two out of five English rarely see, much less taste, good fruit of any description. An Apple, Pear, bunch of Grapes, or handful of Cherries is eaten daily by every subject of Napoleon III. Immense quantities are sent to England, Russia, Denmark, Sweden, and other countries. *Many of my men make as much as 400 francs a-year from their little gardens of fruit, after supplying their own families. This is clear profit, and costs them nothing but labour—the labour of their spare hours, and they are few.* After living seven years in France, and in a district by no means so favourable to fruit culture as many other parts that I could name, I have come to the conclusion that fruit cultivation is better understood by the people in it than in any district in Britain."

You did not take into account the multitudes of wretched Englishmen who have neither Cabbages, Potatoes, nor a garden to grow them in. As you have travelled 400 miles through France, it may not be inapropos to ask in what part of Britain could you, in a journey of 400 miles, meet so little utter wretchedness and hopeless unmanful beggary as you did upon that little journey? I have travelled some thousands of miles in France, and can safely say that I could find more abject poverty, more that is disgraceful to a nation whose very gardeners brag that "there ain't no light in natur, when they wink," in one evening's walk in London than I met with during nine months' journeyings in France. It may have little to do with the matter in dispute, but since you have compared the state of the humbler classes in the two countries, it may not be amiss to take a deeper look than you have done. Perhaps you think that the presence of a nobleman's or rich merchant's garden, with a prodigious quantity of bedding stuff and any amount of money to spend upon glass-houses

compensates for much of this misery; but I fear the age is rapidly-passing away when you will find many to participate with you in such lofty thoughts. If you had specified the "delusion" propagated intentionally or unintentionally by the writer of the articles in the 'Times,' I should have been able to answer you directly and immediately, and have now merely to say that no delusion of the kind existed, and consequently there was nothing to be dispelled. The statements in the 'Times' were accurate estimates of the value of the subjects discussed therein, and being facts cannot be confuted, and being suggestive facts, are likely to lead to much improvement in our fruit-culture. You hint at "some writers" who have partaken of Asparagus in Parisian restaurants analogous to "Simpson's in the Strand and the London Tavern." I constitute the sum of the "some writers," and may therefore be permitted to say that you have here fallen into a mistake, usual with persons who know but one side of the question. In London, Asparagus is confined to such houses as Simpson's, and therefore connected in your mind only with such; in Paris, it is found in the humblest restaurants, both cheap and good—so much so, that the humblest cabman enjoys this wholesome and refreshing vegetable. And here I will give you a glimpse of my method of going to work. I dined everywhere in Paris from the grand hotel, and the snug and unpretending but excellent Desiré's, to the great cheap houses of Duval and Porret, in some of which the seats contain 500 persons for hours during each evening. I have dined one evening with the renowned Philippe in the Rue Montorgueil, and the next with the rough workmen at a place called Californie, where you get about a hatful of fresh salad for a penny, and where I heard an English navy say, "If the meat is horseflesh, it's wery nice!" I did all this, and much more than I can tell you, simply for the sake of ascertaining how every grade of the people lived. This habit usually stands my good friend when my preliminary efforts to add a little to the knowledge of our beautiful profession meet with obstruction and misrepresentation from those at whose hands (before my recent experiences) I should have expected a little encouragement. You hint, in a round-about way, that I have stated French gardeners to be before English ones in "the practical application of horticultural knowledge." Here you are surely stating what is hardly fair, for as the editors of the 'Gardeners' Chronicle' remarked in a note to the end of my 'Letters from Paris' in that journal, I had frequently and emphatically stated the general superiority of the British gardener. I never even went so far as to tell him that he knows not how to grow winter salad, as Mr Knight does in your last number. It seems to me that you wished to adroitly flatter the British gardener (so that he might bolt that disagreeable pill without any fuss), by having a mild fling at the person who, though he only visited France for the first time during the past year, is the first who has ever aroused public attention to anything horticultural to be learnt there, or even to mention some of the minor, but not less instructive, features of French gardening. It seems to me that you failed to remember several rather important facts in your enumeration of the merits of French gardeners. I will with your permission supplement a few of these. The French cottager does not merely surpass the English one in the management of pyramidal pear trees: he often surpasses the great English ducal gardener who has spent his life at the profession, and has perhaps twenty or thirty men to carry out his learned instructions. I could find better and handsomer trees in the gardens of retired tailors and confectioners in the neighbourhood of Paris than in any of your great fruit-tree nurseries. It also seems to me that when you rose to the magnificent height of gardens with twenty acres of mud in the bottoms of the lakes, you might have remembered that memorable sea of blood in which most of the class that support such artificial beati-

tudes were drowned, and also the different distribution of property and wealth in the two countries. If from some backwood of the Western States of America, where the hardy pioneer had not got to the smallest luxury of gardening, you heard of some tool or some simple mode of culture which saved labour and time, would you denounce it because gardening of the particular type that you were employed in was not to be seen in that country? Tell a Frenchman of the great extent to which English gardeners surpass him in the management of hothouses and the higher and more artificial luxuries of gardening, and he will tell you immediately that it is money that is the primal cause of this superiority, and perhaps add that the true test in those matters is the market one, and that producing a supply of fruit and vegetables for the people is more worthy of self-congratulation than being able to see a number of large gardens here and there in the midst of a general ignorance of useful gardening amongst the masses of the people. Which of the two nations has most reason to boast in the matter—those who pay many thousands annually for products which ought to be produced at home, or those who receive this sum and thereby enrich themselves and their country? You might, I think, when attempting a statement of the merits of the despised French gardeners, have remembered that both the bedding system of spring gardening and sub-tropical gardening were practised extensively in French gardens, before their introduction to us, and that they were first seen in Paris gardens by those who have made them most popular in England. In addition to the foregoing facts, it is worthy of mention that the French market-gardeners get, to speak well within the mark, twice as much marketable produce as an Englishman would off the same space of ground; that indeed, according to excellent report, they excel all Europe in this respect; that the plant-houses and bedding-plant stores of the city of Paris at Passy are the most complete and instructive in the world, and likely to be much more so; that the example which the city of Paris has shown by planting millions of beautifully-grown trees in all parts of the town, and thereby introducing to it the highest beauty, is worthy of all praise and imitation; and that in the matter of Fruit-culture, and Salad-growing, and not a few minor matters which I shall not occupy space in enumerating, we may learn useful hints from the French horticulturist. That he has much more to learn from us I am aware. Perhaps the young, highly intelligent, and self-educated French gardener who has recently won that splendid prize, the laying-out of Sefton Park at Liverpool, beating some of the most experienced of our landscape gardeners, will explain to them, when he gets better acquainted with this country, the many merits of our culture. Indeed, I have already known him to take notes with that object in view, and be full of admiration for our excellent plant-culture. And now, hoping that as the Frenchmen wagged their heads over Mr Knight's Grapes, you too will not be above a slight oscillation of that member, and thankfully accept the lesson being taught you in Salad-growing and other matters, in the spirit that all such things should be accepted in. And now, in conclusion, one word about French Pears. You are under a great mistake about them. I know well what Frogmore is capable of, and have tasted a good many Pears, both in France and England. Nothing ever grown can surpass the flavour of French Pears, and the garden at Frogmore would have no more chance of competing in Pears with some French gardens *not one-tenth its size*, than a wild Pear would have in competing with a perfectly-flavoured and developed Beurré Diel! I once saw a fruit-room solely devoted to Pears near Paris, Pears gathered from a comparatively small but beautifully-managed fruit-garden, which was worth a journey of 100 miles to see; indeed, Mr James Barnes, of Biston, who also happened to see it during the past autumn, acknowledged that it repaid him for his journey to France. If you

could see that fruit-room now, and alongside it the portion devoted to Pears at Frogmore, I think you would be astonished at the sad and surprising difference.—
I am, Sir, respectfully yours,
WILLIAM ROBINSON.

[Mr Robinson must excuse us if we tell him that he has just left the question where we left it. We admit the superiority of the French in the production of Winter Salads, Asparagus, and Pears, the latter as the result of their fine climate more than anything else, and he is able to put in no other claim for them on tangible evidence. With regard to their system of sub-tropical gardening, that can never, from the nature of our climate, assume any importance in this country.—ED.]



QUEEN EMMA MELON.

THIS excellent variety, according to gardening phraseology, was "let out" in 1867. It was obtained by a cross between Heckfield Hybrid and Mr Meredith's Cashmere. The superior quality of the parents is well known; yet the offspring far excels them. The flesh is white, melting, exceedingly juicy and sugary, possessing a flavour far superior to any Melon I have ever tasted. Nor do I rest this decision entirely upon my own authority; it is supported by the testimony of others. United to these, it bears freely, is of a strong constitution, not subject to canker or disease of any kind. The average weight is from $2\frac{1}{2}$ to 3 lb., circular, closely netted, of a golden-yellow colour; the skin about $\frac{1}{16}$ of an inch thick.

I would mention that I have heard several and rather severe complaints made against this variety, but without any foundation; in fact, they may be relatively true, but positively false, as I am aware that a spurious kind has been grown under the name of Queen Emma, which by no means invalidates the character I have given her. I can speak with confidence, having had the Lady under my own management.

A. CRAMB.

FORTWORTH.



ORCHARD-HOUSES.

SIR,—I think that the comparison of gardeners' experiences is more useful between Irish and Scotch gardeners than between either of these and the inhabitants of the south of England, where a light dry soil and subsoil, and a more active summer-heat, produce results which we in vain seek to obtain in our damper and colder regions; and the success of either farmer or gardener depends wholly in his skill in finding out what plants he can produce in the greatest perfection in any given soil and climate, and leaving the culture of plants which merely struggle for existence with him to those with whom they flourish and look happy. Indeed, the pleasure of gardening would be much greater if, instead of every one trying to imitate what every one else has, each proprietor tried to vary

as much as possible from the dull uniformity which reigns in most orthodox gardens, and let his visitors find always something striking and new to enjoy.

It is with this view that I think, perhaps, that though my experience in orchard-houses has been on a very small scale, some notes of it may be of some interest. Very soon after the publication of Mr Rivers's 'Orchard-House,' I went to see his houses at Sawbridgeworth, and put up one 64 feet long on the exact plan of his small span-roofed house. It cost £28. I got from him a selection of pot fruit-trees, and was very sanguine as to the probable results; but I was disappointed. Although I kept the plants out during the winter, so as to keep them as backward as possible, the mild moisture of our winters brought them too forward; and the unheated orchard-house was not a sufficient protection from the April and May frosts, and for some years my orchard-house was a dead failure. I then sent a single 4-inch pipe round the house, with a valve which enabled me to give just enough heat to protect the blossoms when expanding, and I never failed afterwards in having a full crop of fruit, and of excellent flavour, and there really seems to be no difficulty about it. I now bring in some of my trees much earlier than I used to do, for indeed in this climate there is little value in stone fruit which is not ripened in the early autumn. There is little power in the sun after the middle of September, and this is our reason why we are so far behind Mr Rivers in success with late fruit, for the wood of trees that have not had an early start seldom ripens perfectly. Mr Rivers was, I believe, the first to reason, from the very hot days and cold nights of the native country of the Peach, that such should be the nature of the artificial climate which would best suit it here; but gardeners have been slow in coming to the conclusion that the same night and day variation of temperature is essential to the health of every plant we grow—from the tropical Orchid to the half-hardy greenhouse plant.

It is curious to read the directions in gardening books, up to the present day, dwelling upon the importance of catching the greatest quantity of the sun's rays in the houses, and shutting up at three or four o'clock, in order to keep as even a temperature at night as possible. All the practice of the best Vine and plant growers now seems to be to help the sun to give the greatest degree of heat in the daytime, and when he withdraws his rays, to give as much night-air, and reduce the temperature as low as possible without exposure to frost. And it appears to me that if one wanted a receipt for growing red-spider instead of Grapes, it would be to have a house shut up and stifling at night, and a liberal syringing of the leaves instead of the alleys.

This total change of practice must lead to a change in the position and construction of fruit-houses. Our cry now is for the maximum of daylight and heat; and I believe that we must correct Mr Rivers's original recommendation that "it is essential that these large houses should stand endwise N.E. and S.W., or nearly so." That is presenting the end to the sun at the time that he gives the greatest degree of heat, which is, I believe, between two and three o'clock. Now, if I stand at the N.E. end of my house in the middle of the day, I do not see the sun; I see a long perspective of rafters and collar-ties overlapping each other, and shading the plants just at the time that the sun's heat is strongest—and the beams strike the glass directly only when weakest in the morning and evening. If it is assumed that the heat of the sun is represented by the size of the angle of incidence, the six hours in the middle of the longest day will give as much heat as the other eleven hours; and during these six hours the trees in Mr Rivers's house would be comparatively shaded, while in an E. and W. house the hottest rays come with full force on the unshaded fruit and future fruiting-shoots, and we are only following nature in tempering the force of the morning and evening rays. I

have lately built a small span-roofed house, which I think likely to succeed very well. It runs E. and W. At the bottom the only wall is a ventilator, consisting of one 11-inch board with long apertures sliding over another similarly pierced. This is on both sides. Over these ventilators comes the wall-plate, on which is a high span-roof exactly on Mr Rivers's plan. Along this apex, on one side, is a line of perforated zinc 4 inches wide, and with a little penthouse-cover to keep out rain. *This ventilation is permanent.* The upper angles of the two ends have ventilators turning horizontally on pivots, by which the air traverses freely the upper part of the house. It seems, from the growth of the plants in it, a remarkably healthy house; and the one straight rafter glazed to the ground is scarcely, if at all, more expensive than Mr Rivers's wall and rafter, and gives fine room for cutting-boxes.

The rafters are $4\frac{1}{2}$ by 12 inches, but I am not quite satisfied with them. I have adopted the common fencing wire strained from rafter to rafter, instead of collar-ties; and the house has stood the violent storms of last winter as well as any with wider collar-ties, and the light is much greater. I wish for the advice of gardeners as to whether, by the use of wire or light iron rods and gas-pipe pillars, we could not reduce our rafters to a depth of 2 inches, or even $1\frac{1}{2}$ inches, and still construct a roof firm enough to carry 21-oz. glass. Perhaps your insertion of these observations might draw out from others some useful suggestions.

W. H.

HAMWOOD, *January 10, 1868.*

ODDS AND ENDS.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—We have had a copy of the rules of this Society, with its balance-sheet for the year just ended, forwarded to us, with a request on the part of the Secretary, Mr William Heale, 14 George Terrace, Brook Street, Upper Clapton, London, that we would give a notice of the Society's operations. The Committee who drew up the rules, which are too long for quotation in our pages, preface them by the following remarks: "In drawing up these rules, the Committee have endeavoured to give every possible assistance to the gardener compatible with safety. The many benefits contained in them will, they trust, cause gardeners, as a body, to join the Society, and extend its benefits." The objects of the Society are to extend assistance to gardeners in time of sickness, calamity, and old age; how this is to be effected is set forth in the rules. On the 14th of last month the Society consisted of twenty members, having been but two years in existence; yet the balance at its credit is £462, 5s. 5d. This sum has been made up of the monthly payments of its members, donations from gentlemen, and more especially of the proceeds of the United Horticultural Society's Exhibition held last year in Guildhall. From this source alone it received £231, 15s. 6d. While we have little or no knowledge of the Society or its aims beyond what we gather from its printed rules, we wish it prosperity.

We have long looked upon it as a melancholy fact that, while numerous trades and professions have their benevolent societies and pension-funds, with almshouses and every other appliance for the relief of age and indigence, gardeners have none of a really comprehensive character. They have done much to support horticultural and botanical societies, they have created a literature in great measure by

their gratuitous labours, yet they have done nothing for themselves. This we attribute in great measure to the want of a leader in whom all could place perfect confidence; and we yet hope to see some nobleman or gentleman come forward and place himself at their head in such a way as at once to gain universal confidence. In Hogg's Almanac there are the names and addresses of 2000 gardeners and 1800 nurserymen and seedsmen in the United Kingdom, and we know that there are ten times as many of the former as are given, seeing that the 2000 are those in places of note in their various counties only. We see no reason why a society with an income of £10,000 a-year could not be formed, if proper leaders would come forward. We hope that gardeners will give this matter the consideration it deserves. They too well know that, with the necessities of life at present rates, no gardener with a salary ranging from £50 to £100 a-year can make much, if any, provision for old age or infirmity.

NATIONAL HORTICULTURAL EXHIBITION, to be held in the Gardens of the Botanical and Horticultural Society, Old Trafford, Manchester, May 29 to June 5, 1868.

The Directors of the Manchester Botanical Society, emboldened by the success that attended their efforts last year, achieved under great disadvantage of weather, are this year making a still grander effort; and if liberal prizes, good management, and courteous treatment of exhibitors, judges, and the public, can command success, they are sure of it. In the open classes, 16 stove and greenhouse plants in bloom receive £30 for the first prize, and £20 for the second; 10 foliage plants and 10 plants in bloom, the same awards; 10 greenhouse Azaleas in bloom, £20 and £12. In the class open to all, £132 is offered. In that open to amateurs only, £312, 5s.; to nurserymen only, £402. For fruit, £54; for bouquets, £19. Making a grand total of £919, 5s.—the largest sum ever offered as prizes by any provincial society, or probably by any other, for the Great International Show was not conducted by a society.

All honour, then, to the Manchester Botanical Society, to Henry Whitworth, Esq., its able Secretary, and Mr Findlay, its indefatigable Curator, for the efforts they are making in the cause of horticulture! And we are sure that the gardeners of Lancashire will sadly belie their well-earned reputation if they do not hold their own ground against all comers on the occasion.

We observe that Mr Ingram retires from the management of the Royal Gardens at Frogmore, a position he has occupied with great credit to himself for the lengthened period of fifty-four years, and that he receives a handsome retiring allowance.

To Mr Ingram we are indebted for many excellent varieties of various fruits, and not a few of flowers; and he carries with him into retirement the consciousness of not only having discharged his duty to his employers, but of having left the horticultural productions of his country, by his own efforts, much richer than he found them, thus conferring a boon on all.

It must be very gratifying to Mr Rose to know that the manner in which he conducted the practical part of laying out the princely gardens at Floors Castle, and their subsequent management, has raised him so high in the estimation of his employers as to merit from them such a recommendation as must have been necessary to procure for him one of the few prizes in the lottery of gardening. That he may enjoy the appointment as long as Mr Ingram has done, and retire from it with as much credit to himself, will, we are sure, be the wish of all who know his many good qualities, both of head and heart.

REVIEWS.

CARTER'S PRACTICAL GARDENER.

This is a cheap pamphlet, containing a great variety of useful practical directions and hints, calculated to be of much service, especially to amateur gardeners, whose name now is legion.

L'ILLUSTRATION HORTICOLE. Edited by M. AMBROSE VERSCHAFFELT, GHENT.

This work is, as usual, beautifully illustrated. The first plate contains two *Calladiums*: *Pevosianum*, green, with curious conglomerates of white at intervals; the other, *Splendidum*, resembles *Beccolara Splendens* too much to be of great value. A second plate is *Reineckia Carneae Variegata*, a pretty variegated plant from Japan. The third plate is *Thuja Orientalis* Var. *Verschaffeltii*: this is a beautiful garden variegated variety of the *Thuja*, calculated to be a great ornament in the flower-garden and pleasure-ground. The letterpress of the work is chiefly descriptive of the plates.



Notices to Correspondents.

[We regret that press of matter this month compels the postponement of several valuable communications.—ED.]

F. W.—Your Peach-tree being between thirty and forty years of age, and decaying at the top, we advise you to get a good young Peach-tree, plant it in some other part of your garden with a southern exposure, in a little turfy loam. Take what fruit you can get off the old tree this year, and next autumn replace it by removing the young tree with all the ball that will adhere to its roots. In this way you will get fruit from the old tree this year, and from the young one next year. Trench the soil well, and, if possible, add a little fresh loam about the roots.

A SUBSCRIBER (Tadcaster) is greatly obliged to "The Squire's Gardener" for a parcel of rooted cuttings of *Nepeta teucriifolia*, which arrived safely.

DOWN SOUTH.—Many thanks for your letter. We are writing the articles on fruit ourselves, and will avail ourselves of your information about the Fig-trees at Worthing. We were quite aware that in Kent and Sussex, as well as the other southern counties of England, Figs ripened in the open air as standards.

D. J.—Get a hard brush, and brush all the brown scale off your Peach-trees at once; then wash them well with the same brush, using warm water in which 2 ounces to the gallon of soft-soap has been dissolved: after this is done, make up a mixture consisting of one part tobacco-water to four of water, in which dissolve at the rate of 3 ounces to the gallon of soft-soap, add a little clay to give it consistency, and paint your trees all over with it. We are not able to give you the name of a work on the Peach-tree specially. In our pages you will shortly see a set of papers on the Peach, which may probably meet your case.

A SUBSCRIBER.—There is no such Grape as you name in the trade. Foster's white seedling has sometimes been sent out under the name you mention, but has no right to be so. You should make inquiry of the nurseryman who supplied you about it.

ERRATUM IN LAST NUMBER.—In page 42,* line 19, for "Royal Horticultural Society's Journal," read "Royal Agricultural Society's Journal."

THE GARDENER.

MARCH 1868.



FRUIT-CULTURE.

THE FIG.

(Continued from page 62.)



THE ENEMIES OF THE FIG.—When the Fig is cultivated under glass, it is subject to attack from the following insects—red-spider, thrip, mealy bug, and brown scale. As prevention is better than cure, we advise that all such plants as are notoriously subject to any of these insects should be kept out of the fig-house; and supposing the trees to be infested with any or all the insects named, let the following course be pursued with them: The moment the leaves fall, let them be gathered and burned in one of the furnaces, with all the inhabitants that dwell on them; remove all stakes and ties—burn the latter, and soak the former in boiling water; get a spoke or other hard-brush, and brush the plants all over, giving them a good scrub; then prepare water at a temperature of 120°, and mix it with soft-soap at the rate of 2 ounces to the gallon. With this let the plants be thoroughly washed by means of the same brush, taking care that no corner or crevice is missed, for these are the citadels of the enemy during winter. The trees thus far cleansed, scrape off and remove 1 inch of the surface soil, so as to take with it all leaves or insects that were brushed off the trees. See that the bug is not on the roots just under the soil, and if so, trace and remove it, else it will come out quite fresh and ready for mischief in spring. These precautions attended to, spread a

couple of inches of fresh soil over the roots, of the same character as that recommended for planting the trees in, if the trees are in vigorous health. If stunted in their growths and very fruitful, let the topdressing consist chiefly of rotten manure or horse-droppings, into which the plants will root rapidly and derive support. The trees, whether in pots or planted in the border, may be staked or trained as circumstances may require. This done, and the whole house—wood, glass, pipes, and walls—having been thoroughly washed—the latter with hot lime-wash—the borders may receive a moderate watering from an engine or the rose of a waterpot to settle and consolidate the topdressing. The plants may now have their period of rest, and they will be ready for starting when that has expired.

Notwithstanding the precautions we have enumerated, one, any, or all the pests we have referred to may make their appearance during the season of growth. If red-spider, sulphur the pipes by running a brush dipped in sulphur-and-water over them once a-week. This will keep the air of the house constantly more or less impregnated with sulphurous acid gas, in which none of the acaris or red-spider family can live. One, or even an occasional, application of sulphur to the pipes is not sufficient. What proves effectual in checking the ravages of red-spider is the constant application of it, not necessarily over all the pipes, but say over the surface of two out of four pipes that may be in the house.

If mealy bug makes its appearance, it is much more difficult to deal with. Wherever ants are seen to congregate on the tree, examine and discover what they are about, and in nine cases out of ten it will be found that they are superintending a colony of brown scale or mealy bug, from which they derive advantage in some shape or other—making use of some of the secretions of the insects, most probably. We more than suspect that the ants aid in planting colonies of the insects referred to, with a view to increasing their own supplies of food. Be this as it may, if either scale or bug is discovered, remove it by hand, and wash the part of the tree infested with a mixture of soft-soap and tobacco-water—2 ounces of the former and a pint of the latter to the gallon of water. For destroying brown scale, we have found "Fowler's insecticide" very effectual, used according to the directions sold with it. For checking the ravages of thrip use strong fumigation with tobacco, repeated three nights in succession. To the tobacco may be added a little Cayenne pepper or dry capsicums. We have found Portugal Laurel leaves, pounded as in a mortar, and spread out under plants affected with mealy bug, destroy that insect; but where the house is large, it takes a great many leaves to be effectual. No doubt the prussic acid is the active agent in this case, which raises the ques-

tion as to how far it might be possible to apply it from some more direct source.

We have enumerated the best remedies we know of for such insects as attack the trees themselves. We now refer to the greatest enemy the fruit has to contend with—viz., the ant, and especially the small West Indian ant so common in the hothouses of most gardens. The moment the fruit begins to ripen and crack, or open at the end, these most indefatigable pests enter and destroy it in a few days, leaving nothing but the skin. The only plan we have ever found successful for keeping them in check, is to catch them and kill them. This we effect in two ways—first, by placing saucers with treacle in them where the ants most abound. They gather rapidly to devour the treacle, but all become immersed in it, where they soon perish. If the treacle is thick, reduce its consistency by mixing water with it. The other method is to cut sponges into pieces the size of an ordinary apple, dip them in treacle-and-water, and lay them where the ants can most readily get at them—amongst the branches of the trees. They instantly fill every cell of the sponges to eat the treacle; and when in the midst of their repast, pass along the house with a waterpot in which there is boiling water, into which lift and pop the sponges with their thousands of inhabitants. They can then be washed, and redipped in the treacle and set again. The ants soon become few in number if the course here directed is persisted in.

Selection of Sorts—White Marseilles.—This is said to be the same as Raby Castle Fig, certainly one of the best Figs in cultivation; we grow scarcely any other. We got it direct from Raby Castle, and grow it under that name. It is a most abundant fruiter, and forces well. The fruit about medium size, pale green, with a yellow tinge when ripe; the skin very thin, and the flavour most delicious. The tree is hardy, and a very free grower.

Brown Turkey, better known as Lee's Perpetual, is a fine prolific Fig, large and pyriform; the skin, brown, covered with a bluish bloom; flesh, red and luscious. Tree, hardy, and well adapted for forcing or outdoor cultivation.

Early Violet.—This is a very small but very prolific Fig, well adapted for cultivating in small pots. The colour of the skin is brown, that of the flesh dark red. It is of good flavour, and very early.

Brunswick.—A large pyriform fruit, with the apex much depressed; skin, greenish yellow; flesh, tinged red towards the centre. This is an excellent Fig. The tree, hardy, and well adapted for outdoor cultivation.

Castle Kennedy.—A large handsome Fig of excellent quality, but it does not bear freely till the tree has attained to some considerable size,

when it bears and forces well, and is said to be three weeks earlier than the White Marseilles. The fruit is greenish yellow at the neck, mottled with dull grey towards the widest part and the eye; the flesh, pale opaline, with strains of red round the seeds. This variety has existed at Castle Kennedy for a century, but has only of recent years attracted special attention. It is undoubtedly the largest Fig in cultivation.

Black Genoa.—This is a large oblong Fig, broad towards the apex and slender towards the stalk; skin, almost black, and covered with bluish bloom; flesh, yellow under the skin and red towards the interior. Tree, hardy, and a good bearer.

Brown Ischia.—Medium size, roundish turbinate; skin, chestnut-coloured; eye, very large; flesh, purple and high-flavoured. This is an excellent Fig, and it forces well.

We might add to this list many varieties of merit, but we have given the best known to us, and we can strongly recommend the whole of them where a collection is desired. W. T.

ERRATUM.—In last number, page 62, for “fruit of this new shoot,” read “point of this new shoot.”



A NEGLECTED CLASS OF PLANTS.

THE class of plants commonly called “Succulent” are fast disappearing from private gardens; if we except the invaluable winter-flowering *Epiphyllum truncatum*, we rarely meet with any Cacti. Yet this class of plants includes great variety and peculiarly interesting objects. The succulent-house at Kew is perhaps more admired, and its singular features more remembered, than any other house in that great garden by the mass of visitors. The Cacti at Kew certainly present a remarkable contrast to the vegetation of the Old World. These plants are the most singular of all vegetable forms; they are a *leafless* class of plants, and the stem often presents very eccentric shapes; and were it not for the splendid flowers—some of which are very fragrant—some of the species would hardly be recognised as belonging to the vegetable kingdom.

I recommend Cacti as plants of much interest to the amateur cultivator, whose time is often too much interrupted by business for successful cultivation of plants requiring more nice and frequent attendance. The Cacti are, of all plants, the easiest managed, giving little trouble if their natural characters are once understood, and repay with brilliant and gorgeous flowers. In any garden where variety is

prized, the Cactus deserves attention, and better treatment than we often have seen—kept on back shelves and under stages, from which they were only removed on appearance of their attractive flowers.

The first collection of Cacti I saw greatly interested me; the impression still remains. It was at Fyvie Castle, Aberdeenshire. It was a most interesting collection, and the plants had chiefly been obtained direct from Mexico. Does the collection still exist? At the time I refer to, the plants were treated in a very *hardy* manner, and looked flourishing; and there was great variety placed in frames and in odd corners. Their management was a hobby with Mr Morrison, and he seemed proud of his "old men."

Of the easy management of Cacti, I saw in the west of England a very striking instance in a huge old *Cereus*, that stood in the corner of an old shed, and produced annually splendid flowers. This subject was brought to my mind by seeing a few months ago an admirable collection of Cacti in a drawing-room window. The plants are grown on a very pretty table or stand in a bow-window; instead of pots, the plants are grown in shells, clinkers, and other curious rustic objects. The stand is a gem in its way, of delightful interest, and the management would do credit to the skill of a first-class Chinese gardener.

Although the Cacti are most easily managed, they are very easily destroyed by damp. Drainage is a chief point in their culture; the quality of soil is of little importance if drainage is attended to. Sand, or any material approaching that nature, will be found suitable to grow any Cactus. The tall-growing *Cereuses* will grow and flower well in good loam. Very little attention to the structure of a Cactus will show how delicate its system is, and how hopeless is the recovery of a scarce species when it gives signs of going off after potting.

The quickest and most impressive acquaintance with the nature of Cacti is got by handling seedlings. The common sorts come freely from seed, but it is the most precarious work we ever tried to transplant the seedlings in a young state. If left in the seed-pot for a year or more, until the system of the plant is well developed, there is no difficulty. Cuttings grow freely of most varieties, but in some grafting is found advantageous. Grafting the Cactus is the easiest in the performance, and most certain in success of any plant operated upon in this way.

For window-plants the *Mammillariæ* are very suitable; in them the absence of flowers is compensated for in the peculiar and interesting forms.

Any one commencing to grow Cacti should study the natural geography of the plants. Mexico is the great emporium of Cacti. They are found on the Andes of Cuzco at 15,000 feet elevation, and from that to the plains of Chili; and we have lately seen a parcel of Cacti

sent from arid grounds in Peru. In these we have seen a noteworthy lesson regarding bottom-heat. When the plants arrived, a few were put into the hands of a skilful amateur, who at once put the plants into a frame with bottom-heat. They grew as freely as if merely transplanted from a neighbouring garden; while the chief lot, fairly treated in a greenhouse, made no growth, and many have decayed.

CHAS. M'DONALD.



PINE-CULTURE—QUICK RETURNS.

I BELIEVE that many owners of gardens who would like to begin the cultivation of Pine-apples are deterred from indulging their inclinations by the idea that it is attended with great expense, and that years of patience must be exercised before they can realise a return in the shape of ripe fruit. With the first of these obstacles it is not my intention to deal at present beyond remarking that, in this age of simple and efficient heating, it is more apparent than real, especially when it can be asserted that a houseful of Pines requires a very small amount of labour as compared with the production of many other crops of fruits which, for half the year at least, require as high a temperature as Pines. With the question of having to wait long for a return, I think it can be demonstrated that the waiting-time can be contracted to little more than twelve months, even admitting that the commencement has to be made with nothing in the shape of plants more advanced than mere rootless suckers. To show how this can be done, I will simply state that in the month of August 1866 I took a quantity, about thirty-six rootless suckers, from the parent plants—the fruit from which was not ripe—and potted them in 6-inch pots, and plunged them in a bed of tan and leaves, without any bottom-heat derived from fire-heat. They were well rooted by the middle of October, and then shifted into 11 and 12 inch fruiting-pots, and kept gently growing all winter in a temperature of from 60° to 65°, according to the state of the weather; with increased light in February, the growing pace was quickened. The result was, that every one of them ripened beautiful fruit before the end of December 1867—about sixteen months from the time they were removed from the parent plants. I have mentioned the fact that they were removed from the old plants before the latter ripened their fruit to show that the suckers were not extra large when first potted. Indeed, my object was to get roots to them early, and shift them into their fruiting-pots before the dead of winter. The corresponding batch of plants are

equally promising this season, and there is no doubt but this rapid work can be carried out successfully as a system. And surely it must be looked upon as a return equally quick with anything that can be accomplished in the case of Grapes, Peaches, &c. D. THOMSON.

ARCHERFIELD GARDENS.



NOTES ON GREENHOUSE PLANTS.

CAMELLIAS.

(Continued from page 58.)

Shifting the Plants.—Considerable difference of opinion is entertained as to the proper season for this operation. Few, with the smallest practical experience, but are conversant with the fact, that the Camellia will not submit at all times with impunity to potting. Some recommend potting immediately after the flowers have dropped; some permit the plants to complete their growth; some, just previous to placing them outside for summer exposure; but I have invariably chosen that time when the flush of the flowers is past, and occasionally, with individuals that show symptoms of growth at the extremities of the shoots, earlier, and with uniform success. It is quite apparent, where any extent of variety is grown together, that all are not constituted with the same growing propensity. Therefore it is found that those which present us with the most perfect flowers are often possessed of considerably less vigour, and are equally tardy of growth, while others more robust are so impatient to add to their dimensions that the blooms are sometimes nestled among the young growths while yet in their youth and beauty. With such difference it would be extremely injudicious to treat both cases alike; and I have always made it a rule to divide the stock, placing the strong and early sorts together, and the weak and latest together, potting each group as soon as visible indications of growth appear. Notwithstanding unexpanded flowers, the risk of weak growths and cramped roots ought to be considered more dangerous and of greater importance to be avoided than the loss of a few flowers; but at the same time, if the plant is in possession of sufficient root-capacity to make strong healthy growth without matting the roots, better defer shifting until some time in June, just before placing the plants out of doors. But a word in passing about the danger of allowing the roots of young plants to get matted. The Camellia possesses roots that grow to extraordinary thickness if permitted to live a fair age, and any one can conceive the drawback and bad consequences attending their roots

getting interwoven while young, seeing that every year adds to the evil from enlargement, until they form a complicated inseparable knot. The first few pottings are the times to guard against this, by carefully separating the roots before repotting, thereby allowing room for the roots to swell near the junction of the stem.

Pots two sizes larger than those just occupied ought to be preferred. They should be well washed, and scrubbed outside and inside with a brush a day or two before using, at the same time washing an abundant quantity of broken pots for drainage. When all is prepared for a commencement, make considerable allowance for drainage by supplying each pot with the crocks, covering them with withered moss. Next turn out the plants carefully, cut back any roots disproportionately long with a keen-edged knife, on the condition that the plant can afford to lose such. Make a few incisions about half-way through, well up the main roots; this will insure additional fibres, that will appear the following season in masses at each incision, when the plants can afford to have those long roots cut back. This done, pot the plants into the compost already prescribed, pressing the soil pretty firmly, but avoiding ramming with anything but the hand. Potting finished, administer to each a good soaking of tepid water through a rose, and convey them to a shady warm place under glass, keeping them shaded until they have recovered their natural appearance. A vinery, when not over-thickly shaded with leaves, is a very suitable house, as the plants can enjoy a temperature ranging from 60° to 70°, with a moderate supply of mild fresh air while they are making wood. Other houses will suit equally well if the other conditions are fulfilled—viz., heat, air, water, and slight shading, syringing after hot sunshine in the evenings, always using water heated to the temperature of the house. Turn the plants occasionally while making their wood, and keep them as near the glass as practicable. As soon as it is ascertained that root-action is in full operation, weak liquid manure may be applied once a-week with good effect; it will enlarge the foliage and strengthen the growths. Continue this attention until the wood has attained its full growth, and is partially hardened, soon after which the flower-buds will commence their formation, when the plants may have a more open exposure, if at the same time a uniform temperature can be maintained, though a few degrees lower. This will insure a steady swelling process on the part of the flower-buds that will greatly enhance their value as flowers, securing fine plump buds before placing them out of doors. This accomplished, by the middle of June, the weather favourable, is a good time to quarter them outside, keeping in remembrance that, after the plants have enjoyed such a lengthened period of such comfortable circum-

stances, they are extremely averse to cold, and ought to be provided with a situation that is warm, sheltered, and can afford slight shade, placing their pots on boards or coal-ashes to prevent worms getting into them from below. While in this position, continued attention is requisite to tying-in irregular branches, keeping them free of weeds, and watering—using weak liquid manure now and again—until the beginning of September, when temporary accommodation should be given them in a cold pit, peach-house, or any cool airy structure, until the proper time has elapsed to stage them in the conservatory, there to get the same treatment as advised for seedlings at the same stage.

Pruning.—In the case of young plants, pruning should be exercised with the greatest caution. The urgent demand for cut flowers to meet endless requirements, often renders pruning quite unnecessary; every bloom is coveted, and with the bloom go the ends of the branches. This is sometimes carried to an extent dangerous to the plants, more especially when weak-growing varieties are subjected to it. After such a shock, caused by the loss of all its leaders, the plant frequently gets stunted from its inability to start new leaders out of the hard branches. The best means to apply while in such a condition, is to plunge their pots in a gentle bottom-heat, syringing overhead in the evenings, and keeping rather close until fresh growth appears; and to avoid such risks henceforth, it is a good plan to cut back every alternate leader down to the lowest pair of prominent eyes as soon as it can be judged which is the best to leave for blooming. Such a plan repeated for a few years will effectually overcome this difficulty. Pruning should always be conducted with an eye to maintain regularity, cutting back straggling growths and any others that are likely to outgrow the main body of the plant. This managed with proper judgment will insure handsome and well-balanced plants.

Forcing.—The Camellia, above most other plants, is unsusceptible to sudden excitement arising from heat, and always stoutly protests against being subjected to a dry heated atmosphere, as experience will show from the dry hard leaves when exposed for a time to such influence. When we consider the lengthened period that elapses from the first formation of the flower-bud until the perfect development of the flower, it becomes apparent that forcing should be conducted at first with moderation, gradually raising the temperature as the buds advance towards opening. What materially accelerates forcing, if early flowers are required, is to push the plants in their growing season, and thereby obtain early maturity of wood, which will allow longer time for what is indispensable to the production of good flowers—a quiet uninterrupted formation and swelling of the flower-buds. The tem-

perature to commence forcing with should not be above 55° bottom, and about the same atmospheric heat, changing a little according to the effects of the sun, allowing the thermometer to rise by degrees until it reaches 70° by day and 65° by night about the time the buds begin to open. Should the plants be required for conservatory decoration, a reduction of temperature ought to take place a few days before their removal. Attend constantly to supplying abundance of tepid water for their roots, at the same time taking care not to over-water.

The following dozen sorts I consider highly commendable for the qualities of their flowers and diversity of their colours, and should form a suitable group for a small establishment: Double White, Archduchess Augusta, Caryophylloides, Countess of Orkney, Donke-laarii, Fimbriata, Imbricata, Jubilee, Marchioness of Exeter, Teutonia, Mathotiana, Henri Favre.

A. KERB.

(To be continued.)



GRAPE-JUDGING—A Case in Point.

As an evidence of the interest felt in the discussions bearing upon Grape-judging at our exhibitions, I see it has found its way into the pages of the 'Gardener.' It is certainly not a little amusing to see the great diversity of opinion which exists upon this subject even amongst practical men. I have carefully noted the opinions as expressed by those who, I have every reason to know, do grow good Grapes, and with even them the subject is not yet sufficiently ventilated.

At present I do not intend taking up the knotty subject, but proceed simply to state a case bearing somewhat upon the point.

About the middle of September there was a horticultural show held in the county town, ten miles away. I had a house of Vines, eighteen months planted, bearing a very good crop of fruit, being generally well spoken off. I ventured to take three bunches of Lady Downes off one Vine to the show. I repeatedly remarked, before going to the show, "Well, it depends on how they may be judged." Each bunch was about 2½ lb. weight, well-proportioned, having been well thinned out, and about the richest coating of bloom upon the berries I ever saw upon any Grapes. But I said it all depended on how they were judged whether they obtained a prize or not, because I was well aware they were not fully ripe; and should the judges taste them, I had grave doubts of obtaining a prize for them. With these misgivings in my mind, I ventured to take them to the show. Never having been to an exhibition in the county town, I could not form an opinion re-

specting the Grapes that might be brought against them. Hamburgs were staged against them, the bunches much about the same in size, and dead ripe. The best of them appeared good fruit, but there was very little bloom on them in comparison with the Lady Downes Grapes. The bloom-admirers very nearly carried the day, as Lady Downes came off equal first with the best Hamburgs. These were both very good Grapes; but the Hamburgs were rather beyond their best appearance, and Lady Downes would have been all the better to have hung for another two or three months before being cut. To my mind, this was not the proper point to decide from. The decision should have been in favour of the best and most suited in all respects at the time for a gentleman's table. I felt that, had the judges tasted the Grapes, mine would have had but a poor chance of standing so high in the prize-list.

I observe that it has been suggested that the Fruit Committee of the Royal Horticultural Society should take up this knotty and interesting subject, and after mature deliberation, give out what they consider should be the most equitable and proper points to be taken as guides in judging Grapes; and I hope whoever may attempt to do this will lay down the tasting-point as one to be strictly adhered to.

G. DAWSON.



THE POTATO DISEASE.

TO THE EDITOR OF THE GARDENER.

CHEW MAGNA, BRISTOL, *November 16, 1867.*

SIR,—In the 'Gardener' for March 1867, in reply to an inquiry, you kindly gave me information which I have found of much practical advantage, for which I beg to thank you.

In the excellent number for November, in reply to your correspondent "Murphy," you attribute the potato disease to a fungus. As that theory has not hitherto been successfully controverted, it must be accepted; but, inasmuch as, I believe, it has never been demonstrated, it must be held as open to controversy.

With some previous knowledge of chemistry, I have recently, in digging unsound potatoes, had opportunities for careful observation. In many cases, I found distinct signs of incipient germination, and frequently I found the skin of a potato containing little else than impure gum. I placed about ten pounds weight of partly diseased tubers in cold water over a slow fire, and as the mass became heated a saccharine odour made itself very distinguishable. Reasoning from these particular facts, by induction I have formed a general theory, which, if it be correct, can be proved by deduction from established facts of chemical science.

PRELIMINARY.—In the early years of the potato disease, a gentleman, I believe, in Worcestershire, made known that, in the preceding winter, he had grubbed up a hedge, burned the stuff, and scattered the embers, which were afterwards dug in, and the ground planted with potatoes; and that at digging-time he found that the crop from the land that had been thus carbonised was perfectly sound,

whilst the rest of the field yielded a large percentage of diseased tubers. About the same time, Mr John Sealey, the well-known florist of Bristol, made known that all the potato-grounds around St George's were infected, except a field of his which was exposed to the dense smoke from the Blacksworth Lead Works at the foot of the hill. Moreover, it is recorded in 'Morton's Cyclopædia of Agriculture,' that in those parts of the Swansea valley which are exposed to the smoke from the numerous copper works, potato disease is unknown. It thus appears that carbon, whether in the form of crude charcoal, or in the azotised form of smoke and soot, is a *preventive* of the potato disease.

For the quotations marked below, I am indebted to 'Fownes's Manual of Chemistry,' and 'Chambers's Information for the People,' article "Vegetable Physiology." I have simply applied the general facts to the elucidation of a particular case, which I prefer to state in a series of propositions, so that if there be a fallacy involved, it may the more readily be detected; the attaining of a truth being a matter of far higher consideration than the establishing of an opinion.

ARGUMENT.

1. "The food of vegetables is wholly inorganic."—*Fownes*.
2. Hence plants cannot take up and assimilate starch until it is reduced to an inorganic and soluble condition.
 ["Fecula—that is, starch—can be obtained by rasping or grinding to pulp the vegetable structure, and washing the mass upon a sieve, by which the torn cellular tissue is retained, while the starch passes through with the liquid, and eventually settles down from the latter as a soft, white, insoluble powder, which may be washed with cold water, and dried with a very gentle heat. Potatoes treated in this manner yield a large proportion of starch. . . . To the naked eye it presents the appearance of a soft, white, and often glistening powder; under the microscope it is seen to possess a kind of organisation, being made up of multitudes of little rounded transparent bodies, upon each of which a series of depressed parallel rings surrounding a central spot or hilum, may often be traced. The starch-granules from different plants vary both in magnitude and form."—*Fownes*.]
3. The soluble condition of starch is a gum called dextrine (the British Gum of commerce).
4. Dextrine can be produced at ordinary temperatures only by the action of diastase.
5. Diastase, which breaks up the starch-granules, and resolves their substance into the amorphous and soluble condition, is produced only in the process of germination.
 ["The nutritive substances laid up in the seed become quite changed during the process of germination. The starch, which is insoluble in water, is rendered soluble by the action of a peculiar substance called diastase, derived from the gluten. This substance has so powerful an effect upon the starch as to render it instantly soluble in the sap, and thus nutriment is gradually prepared for the use of the infant plant. As the sap ascends, it becomes sweet; the sap is changed into sugar."—*Chambers*.]
6. Germination is induced by a concurrence of heat and moisture.
7. A concurrence of heat and moisture induces in the potato a disease which breaks up the starch-granules, and resolves the substance of the tuber into gum.
8. From these premises I beg to assume—that the gummy matter, the ultimate product of disease in the potato, results from the action of diastase produced in the process of germination in the immature tuber; that the germination is induced by a concurrence of heat and moisture; and that the tendency to germinate is increased by an undue proportion of nitrogenous matter, or by a deficiency of carbon in the soil.—Yours very truly,

JUNIPER BUSH.

FRENCH AND ENGLISH GARDENING.

TO THE EDITOR OF THE GARDENER.

SIR,—In the note which you append to my letter in your last number there are two remarks that invite a word in reply. You say the superiority of the French as pear-growers is caused by their climate more than anything else, and that sub-tropical gardening can never assume any importance in this country from the nature of our climate. Now, I have ascertained beyond doubt that, if the culture of plants with fine and graceful leaves, or what are commonly called “sub-tropical plants,” never assumes any importance over a great part of England and Ireland, it will not be the fault of the climate. In Paris, all last summer and up to the end of August, I made up my mind to leave it for six weeks solely to examine the state of the sub-tropical gardening in Britain, and compare it with that around Paris. Your readers all know what a wretched season the past has been for all tender plants. I came direct from the Paris to the London parks, and was astonished to find very little, if any, difference—all the finer sub-tropical plants looking in magnificent health; one bed of Cannas at Battersea being nearly 12 feet high, the Wigandia in perfect vigour, and even the Cannas and fine-leaved plants generally, in the exposed Hyde Park and on the very cold clay of the Regent’s Park, as fine as could be desired. I even found some of them in presentable condition so far north as with Mr D. Thomson at Archerfield; and the season was so cold and late with him, that the Tritomas had not sent their shoots above the leaves at the time when they usually were in full bloom. I also know from experience, that in many parts of the south of England and Ireland such plants as the hardy Bamboos and many elegant Conifers may be grown to a high degree of perfection—much more so than in the neighbourhood of Paris; and nothing can be more effective than these in or near what is called “sub-tropical gardening.” Therefore that system of decoration is, for all practical purposes, as possible over the greater portion of England and Ireland as about Paris. Indeed, if I had a choice of positions in which to practise it, I should select many places in England in preference to the neighbourhood of Paris, in consequence of the better opportunity the English climate would give me of developing the many noble hardy and slightly tender plants which I know to be so admirable for this system. I could not get them to do at all equally well in the cold winters of inland Northern France. So much for the ornamental gardening. As to the Pear, no one has stated more emphatically than myself, that their climate is much more favourable in some parts; but it is not so to the same extent with the neighbourhood of Paris, and no difference in climate will account for the difference in the pear-growing of the two countries. It should be borne in mind that the Pear grows in a wild state as far north as Southern Sweden; that the frost in spring is as great an enemy to the French cultivator as to the British one; and that the culture of the Pear is carried on to the highest degree of perfection in Belgium, a country which we all know is less blessed with climate than the most northern and unfavourable parts of France. But perhaps the best proof that our climate is capable of producing Pears to a much greater perfection and quantity than at present, was afforded by one of the letters of the person who most opposed me, and who even ridiculed the winter Salads of France. He stated that our climate accounted for our inferiority, and then shortly afterwards proceeded to relate how his Louise Bonne Pears had commanded a better price than French or Jersey Pears in the market! Now, if one individual can do this, why not hundreds in the same country! Shortly afterwards the same individual

asked, "How are we to improve?" And several times during the discussion persons have abused the climate, and almost in the same breath asserted the superiority of British-grown Pears! Now, the truth is that many parts of England and Ireland are capable of producing in any quantity the finest Pears. All we have to do is to plant more extensively the very finest kinds, both against walls and as pyramids, taking care, as far as possible, to ascertain that the kind or kinds are such as attain to perfection in the soil or climate. This, indeed, seems to be the most important point of all, in consequence of the fastidious nature of the Pear. I assert that, if we pay as much attention to the Pear as it receives in the north of France and Belgium, we may, ere many years have passed, come to export the fruit that we now import so largely, and advance by an important step our already admirable horticulture. The truth is, that at present the Pear receives but slight attention to what it deserves, even in many places where professional gardeners are kept; while the numerous classes of humbler amateurs who do the work of their own gardens rarely think of becoming lovers of Pears as they do of Pinks or Pansies, or many other small matters. They could hardly fail to do so if they were to see how much handsomely trained pyramid trees add to the appearance of the gardens of French amateurs even in winter; and if in winter, how much more so when in flower and fruit! I have seen, during the past autumn, Pears grown on large standard trees in the neighbourhood of London—trees never attended to as to pruning or anything else—that were magnificent as to size and flavour; and I have seen as much of the gardening of both the colder parts of France, as well as of the British Isles, to justify me in the assertion that our inferiority as pear-growers in the southern and midland parts of Ireland, at all events, should not be put down to the climate; and that we are deficient of a stock of that fruit both for market and family use, is simply because we do not plant and grow suitable kinds in sufficient quantity.

WILLIAM ROBINSON.

P.S.—A word about Winter Pears. Our deficiency is perhaps most apparent as regards the after-Christmas stock. We can chiefly improve in this way by paying more attention to the finer winter kinds, as wall trees. In the neighbourhood of Paris, and for many miles around, it is necessary to grow the more valuable late-keeping kinds on walls with warm aspect, and so it must be in England. There can be little doubt that the indiscriminate planting of all the good kinds as pyramids, and the withdrawal of attention from the superiority of walls and espaliers for some kinds, has much to do with our backwardness.

[Our correspondent must not confound Conifers, and many other fine-foliaged plants—such as Aloes, Yuccas, Cordalines, and the like, that are very effective in the arrangement of a flower-garden—with what are termed sub-tropical plants.—*Ed.*]



FRENCH AND ENGLISH GARDENING.

TO THE EDITOR OF THE GARDENER.

SIR,—After your very sufficient and dignified reply to Mr Robinson in the note you appended to his excessively verbose criticisms on your unanswerable article on the above subject, you may not feel disposed to continue the discussion; but I hope you will, in justice to one of those whom "William Robinson" charges with bragging that "there ain't no light in natur when they wink," allow me to ask him

what horticulture would suffer if he shut both his eyes and never opened them more! He sneers at you, sir, as a "ducal gardener" with thirty men at your command, and virtually tells you that you cannot grow Pears as well as a French cottager! All this you can afford to pass by; but I beg to ask Mr Robinson what sort of a fix he would find himself in were he placed in command of the men under your charge, and that of hundreds of gardeners similarly situated? His experience amongst a few herbaceous plants at the Regent's Park would avail him very little—and I know that this was the culminating-point of his horticultural life. The fact is, sir, such tyros as Mr Robinson have little more idea of what amount of experience and skill is necessary for the efficient management of a first-class garden than a person who never saw one. Nor do I blame him for this; but what I do blame him for is the flippancy with which he treats subjects of which he is utterly and necessarily ignorant. It is one thing to be able to fill a column—chiefly by the aid of the scissors—in a sporting newspaper; it is quite a different matter either to manage or decide on the merits of the management of a garden. Mr R. charges you with making a mistake when you state that the Frogmore Pears beat the French ones at the International Fruit-Show held in London some years ago. The mistake is, however, entirely on his side, as the records of the Show held on the occasion referred to in the St James's Hall can prove. Mr R. draws a contrast between the Pears at Frogmore and some he saw in France. He ought to know that the season was exceptionally bad in Britain last year, and that Pears were not of average quality on this side of the Channel. The French grow better winter Salad than we do. Your excellent correspondent Mr Knight has told us how this may be done; but I fear, though we get the French *cloches* (bell-glasses), we shall have great difficulty in getting the French sun to act upon them during the months of November, December, and January, in our dark foggy climate. Mr R. would have it inferred that good Salads are not produced during the months I have named in Britain. True, it may not be within the range of his knowledge, but I now tell him that for many years I have supplied my employer's table with Salads—composed of Lettuces grown in frames, blanched Endive, and Chicory, Mustard, Cress, and Celery—during the whole winter. And in the matter of summer Salads, I defy him to produce in France such as can be produced in this country, for the same reason that the French grow better winter Lettuces than we do—viz., the climate is more suitable with us in the summer, as it is with them in winter, for the production of fine crisp succulent Lettuces, which form so important a part of a Salad. Mr R. thinks it of much importance that our peasants should live as largely on Pears and Salads as the French do. Induction from facts is sadly against him here; for the population of France is amongst the most puny, both in stature and weight, in Europe, forming in this respect a perfect contrast to the stalwart sons of his own green isle, who are so much dependent on the Potato for their bone and muscle. Pears and Salads are good enough accompaniments, but bad principals as food for men who have to earn their living by labour, even in the fine climate of France, and worse in the climate of the British Isles. The fact seems to be that Mr R., though no gardener, has the gift of taking notes of things as they appear to him, and stringing them cleverly together, so as to make a readable column in a newspaper, caring little how his premature conclusions may affect hundreds of men with whom, for sound knowledge of their profession, he can never hope to compete, unless he becomes the docile pupil of one of them.

A BRITISH GARDENER.

[Here this correspondence must close.—ED.]

THE ORCHARD-HOUSE.

TO THE EDITOR OF THE GARDENER.

SIR,—Your correspondent who writes on orchard-houses has given what I think is the practical opinion of many experienced gardeners on the subject. Having some little experience in growing pot fruit-trees on the orchard-house system, I venture to throw in my mite, which, if you think worthy of insertion, may induce others to give their experience on what has now become a popular hobby.

At the present day an orchard-house is almost an indispensable thing in a garden of any pretensions. A very pleasing sight it is to see a house filled with healthy trees, laden with their rich fruits in variety; but to think they came there by magic, or by some lady pinching the shoots at a certain leaf with her scissors, is all a mistake. In such a case I would be inclined to think the gardener had some knowledge of his business—had paid strict attention to the nature of the soil he used for potting with; having that operation properly done, and then by careful attention to ventilation, watering, and good heavy syringing (a most important matter), such results may be aimed at. From my experience, I quite agree with "W. H.," that it is a mistake to suppose that in unheated houses, or "glass-sheds," fruit-trees in pots will give satisfaction; with this exception, that in a good lean-to house similar to a vinery, and in the south of England, they may do without artificial heat—and even then disappointments may ensue. I prefer the lean-to for an early house, with an angle of about 40°—south aspect, of course—with fixed roof, and ventilation under the eaves in front, and in the back wall through perforated zinc on the apertures, with enough hot-water piping to exclude frost. And in all cases I like the unequal span-roof *with south aspect* better than an equal span-roof; for this reason, the wall on the north side is of a considerable height (for I would have no glass below the eaves), which gives a certain amount of protection. I may state that for the last three years I have tried some Apricots in pots, in a lean-to vinery, started the beginning of February, subjecting them to the same treatment as the Vines, and taking care they were well supplied with water at the roots. The results were all that could be desired as regards the setting and swelling of the fruit, until the foliage of the Vines began to shade too much, when they were removed to the orchard-house, and there ripened off satisfactorily. Now, this is quite contrary to the opinions of some. Again, I find in my experience that Peaches and Nectarines, Plums and Cherries, in pots, all set their fruits better with a little artificial heat and plenty of air, even in the south of England. When in the north of Scotland some seven years since, I had the opportunity of trying both heated and cold orchard-houses; and the two seasons I had them under my care, the crops were everything that could be desired in the heated houses, whilst a few meagre fruits and a numerous progeny of black and green aphids and leaf-rollers rewarded our trouble in the cold orchard-house. It was no glass-shed, but a good substantial house, only wanting a little heat. An orchard-house standing east and west, unequal span-roof, with 4½ by 2 inch rafters 14 inches apart, glazed with 16-ounce glass, an iron purlin running along the middle of the rafters, and iron pillars, 6 feet apart, resting on some solid material, supporting the roof; ventilation under the eaves in front, and with lights opening to the north, heated just enough to exclude frost at all times;—such a house I would have no hesitation in recommending as likely to give satisfaction, casualties excepted.

R.

THE FLOWER-GARDEN.

No. XV.

HARDY SPRING-FLOWERING PERENNIALS—CULTURAL NOTES.

In offering a few cultural notes on the plants enumerated in the 'Gardener' of February, I will try to compress what I have to say into as small a space as possible, and will first take the perennial or herbaceous plants in something like the order in which they appear in the list of last month, passing over the bulbous-rooted plants for the present.

Ajuga reptans rubra.—A British plant with dark copper-coloured foliage, which creeps closely along the surface of the ground and forms a dense mass of foliage, not higher than *Cerastium tomentosum*. It is not particular as to soil, and can be rapidly increased by lifting and dividing it. It makes roots freely at every joint; and the smallest morsel with a root, planted in rich soil in June, grows into a nice plant by October.

Alyssum saxatile, and its varieties.—One of the most effective yellow spring-flowering plants that we possess, and very easily managed. It can be freely increased by cuttings in June and July. Short healthy growths from the lower parts of old plants, separated from them with a heel, are the best. If hand-glasses can be spared, the cuttings root best under them, behind a wall or anywhere where they will not require being otherwise shaded from the sun. They will also root without hand-glasses in such a situation, by taking strong cuttings and inserting them in light sandy soil, making them very firm in the soil. Plants struck from cuttings in summer make nice compact plants for edgings and front lines; but older plants are best for beds. They bear removal with impunity, and can be used for a number of years in succession.

Arabis, species and varieties.—Some of these are popular favourites, and from their hardy nature, easy culture, and beauty, are the plants of the million. Their propagation and culture is exceedingly simple. It is only necessary to pull the old plants into as many pieces as can be had with roots attached to them, and plant them in beds, where they form nice tufty plants for autumn planting. *A. lucida* variegata, and some of the other variegated varieties, are exceedingly pretty edging plants, while such as *A. albida* are wonderfully profuse blooming plants.

Aubrietias.—These are neat dense-growing plants, suitable for borders or rockeries. To increase them it is only necessary to divide them after the flowering season and plant them in light rich soil,

where they make nice healthy young plants for removal to the flower-garden in autumn.

Bellis perennis (the Daisy).—These are most useful plants for spring gardening, and being the easiest possible plants to cultivate, they are worthy of being extensively grown. They are increased by dividing the old tufts into single crowns, which, with a portion of root attached to them and planted in rich soil, make nice plants in a very short time, and, if necessary, can be lifted in the course of the season, and divided and replanted again: these will make good plants by the end of October.

Cerastium tomentosum (Snow in Summer).—When to be used for spring effect, I would recommend a quantity to be detached from the old plants in July or August, and run out into nursery-beds in a shady place, where it will root and make nice fresh stock for removal to the flower-garden in autumn; or if summer rows of it are denuded of the summer growths in autumn, by simply pulling them off with the hand in October, it comes away early in spring, and makes nice fresh-looking growths for April and May.

Cheiranthus (Wallflowers).—The Wallflower is so well known for its perfume and beauty that it needs no recommendation. To raise them as biennials I refer my readers to the section under the heading "Biennials" which appeared in this series of papers. The double variety, and such as *C. Marshallii*, must be increased by cuttings under hand-glasses or frames, if such are at command; at the same time, they will strike without glass in sandy soil behind a north wall. If put under glass, keep them close by day, and put air in for the night. A firm short cutting—not wiry nor hard, nor yet too green—strikes most certainly. When rooted, transplant into light rich soil; and when they begin to grow, pinch the tops off them to cause them to branch.

Cyclamen.—These thrive best in rather a shaded place, and in dry gritty soil. When to be removed from their blooming quarters, they require rather careful treatment, and should either be potted or placed in light soil where rains can be kept from them while at rest. They do best, however, kept in pots in cold frames till the severity of winter is over, and then plunged in the pots where they are to bloom. They are easily raised from seed sown, immediately it ripens, in light sandy soil well enriched with leaf-mould. In two years they make flowering bulbs.

Dactylis glomerata variegata.—This is one of the most splendid summer decorative plants, and as it never looks more delicately beautiful than in the spring months, when the growths are fresh, and from 4 to 6 inches high, it is available for spring decoration also, more espe-

cially if the plants are either not removed in autumn, or moved with balls to where they are required in spring. It is earliest and best when it can be left undisturbed, merely removing all the old withered grass in February.

Diclytras.—These are plants of great gracefulness and beauty, and in favourable localities are splendid mixed border plants, blooming in April and May. They can be increased by division of the roots, or by cuttings struck in heat in spring.

Gentians.—What can be more beautiful than these in April and May? *G. acaulis* thrives luxuriantly and blooms a long time in rich loamy soil. Both *G. acaulis* and *G. verna* do best in a moist soil, but well exposed to the sun, and left undisturbed for years in succession. If removed annually, they do not flower so well. They are easily increased by division when the blooming season is over.

Helleborus niger.—The hardy and well-known Christmas Rose, which blooms sometimes in the depth of winter, and is the easiest possible plant to multiply and cultivate. It can be divided in early spring, and, planted in rich soil, makes nice plants the same season.

Hepaticas.—These are amongst the earliest and most beautiful of spring perennial flowering plants. They are like the Primroses—excellent plants for decorating shady places where the sun never strikes, and where they last longest in bloom. They move with impunity yearly, if necessary. A light soil, well enriched with leaf-mould, suits them very well, though they perhaps thrive best in a peaty soil. They can be rapidly increased by dividing the old plants in April, and planting them in beds in a rather shaded and moist place.

Iberises rank amongst the most profuse spring-blooming plants that can be grown, and are exceedingly hardy. They bear frequent transplanting well, and are excellent for beds and mixed borders in spring, or for hanging over the sides of baskets. Their culture and propagation are similar to that recommended for *Alyssum*.

Iris.—This is an extensive and interesting genus of plants, but few of them bloom sufficiently early to be available for spring decoration. *I. Persica* is the earliest, and some of its varieties are very beautiful. They are easily increased by dividing the roots, and they bloom best when left undisturbed for several years.

Omphalodes verna thrives best in a dry shallow soil well enriched with leaf-mould. Perhaps its most proper place is in the rockwork. When used for beds, it should be placed in a shaded place for the summer. It is easily propagated by division, and planting it in equal proportions loam and leaf-mould.

Primulas must be ranked among the very *élite* of spring flowers. Perhaps the single purple *Primula* is the most effective bedding spring.

flowering plant of the same colour that could be named. The whole of the Primulas are very easily increased by division as directed for Daisies, and the best place to plant them when divided, and to grow for the summer, is in a moist shady place, such as the north side of a wall. They do best in moist situations where the soil is naturally heavy and moist. The single varieties can be easily raised from seed sown, as soon as it ripens, in rich soil and in the shade.

Saxifrages.—Many of these are most beautiful rock-plants. *S. granulata* and *S. umbrosa* are the best for beds. The former has roots resembling corns of grain, and is increased by separating and planting these as soon as it ripens its growth. *S. umbrosa* is a very easily managed plant. It forms very dense masses of growths close to the ground, which only require to be divided when the blooming season is over, and planted in ordinary garden soil, to make good plants for autumn planting.

Sempervivum Californicum.—A very beautiful plant for edgings to small beds, forming itself into large rosettes of green leaves tipped with dark brown. It thrives well in ordinary garden soil, and increases itself by producing offsets round each plant, which, when planted in light rich soil, soon form beautiful little plants.

Intermediate Stocks.—The varieties of these known as the East Lothian White, Purple, and Scarlet are among the most splendid plants for beds in April, May, and June that can be grown for decoration at that season. To get them to flower in spring and early summer, the seed should be sown about the middle or end of May in a rich light border fully exposed to the sun. When large enough to be handled with ease, prick off into beds about 6 inches apart each way. By the middle of September they make strong stocky plants, and completely cover the ground. Every other plant should then be lifted and potted in 5 and 6 inch pots. Shade for a little time, and then expose in the open air to full sun. Before severe frost occurs they should be placed in cold frames plunged in some open material. When all danger of very severe frost is over, they can be bedded out where they are to bloom. In ordinary winters, these stand in the borders unprotected, and those left in the bed can be planted in the flower-beds in October. They should be lifted with balls, and each plant staked to prevent its being shaken about by high winds.

Pansies.—The spring bedding varieties of these produce a most gorgeous effect for three or four months in spring, and they are indispensable where a gay spring garden is wanted. Plants propagated in September, and planted in February and March, bloom in many places the whole summer. And if the old summer growths be trimmed off these in October, and then the plants lifted with balls and planted where

required to bloom in spring, they produce a wonderful crop of bloom in March, and onward till June. To get young plants in good condition to plant in October, propagation should be seen to earlier—July and August. They root freely behind a north wall in equal proportions of sand, loam, and leaf-mould. If hand-glasses or frames can be devoted to them, all the better, but they strike without glass. Young fresh growths taken from the centres of the plants make the best cuttings. They seed freely; and some of the varieties, such as Yellow Prince, if saved carefully, come mostly resembling the parent from seed.

Viola cornuta.—This is also available for spring flowering, and succeeds well with the same treatment as the Pansies.

D. THOMSON.

THE EXPERIENCES OF AN AMATEUR.

FROM the time the 'Gardener' was first issued, I noticed a defect which I hoped the lapse of a few months would supply; its first year's existence, however, has expired, and still that defect remains. I refer to the want of contributions from the pens of amateurs. Could this class, which is very numerous, be induced to ask questions, write articles, tell their failures and successes, they would not only benefit largely themselves, but would also be the means of encouraging others of the same class, and greatly increase the general interest in the pages of the 'Gardener' and its efficiency as a guide. It must not be understood that I undervalue the very excellent and useful articles written by professional men—far from it; but then we need to be assured that many things can be done in small places, with limited means, by self-reliance and skilful effort, which at present it is too generally believed can only be accomplished by gardeners alone. Our present failures may thus become sources of ultimate success; and although the measure of our successes may fall far short of those attained by our masters in the art, I doubt whether our enjoyment may not be far superior to theirs. I speak here of that class of amateurs who are really the embellishers of their own gardens, and who really grow their own fruit, as distinguished from a class who have acquired the name only through the skill and taste of the men they employ.

I bespeak only a small portion of the pages of the 'Gardener' for the use of the class to which I belong. I would urge my fellow-students in the art to fill that space up monthly, so that every issue may possess a peculiar interest for the amateur.

Up to the time I removed to my present residence, I had no garden, and knew nothing about how such should be managed—that is ten

years ago. The garden attached to my house is about three-quarters of an acre ; its condition when I entered upon it was altogether unsatisfactory, and I could do but little towards its amendment for the first year. I was, however, full of the zeal of a new beginner, and I fell to and planned and worked as best I could. I engaged a man to keep my horse and attend to my garden, which I continued for three years. With a view to economy, I cancelled this arrangement, and hired a jobbing gardener when required. His services were needed principally, indeed almost exclusively, for the heavy portions of the work—such as digging, pruning, and cleaning in the main portions of the ground—the flower beds and borders being reserved for my own special care, as well as the propagation of those plants needed for their embellishment. This was done principally by early rising and late working, my own business requiring all of my time from nine in the morning until seven or eight o'clock at night. My taste for flowers was first acquired in a very small greenhouse, my interest in which led to the purchase of a three-light frame to propagate Geraniums, Fuchsias, Verbenas, &c. My next idea was to have a greenhouse and vinery combined, to be so constructed as to improve the appearance and entrance to my house, as well as to give fuller scope to my enlarged ideas. Well, this was accomplished at a considerable cost, and I kept on growing flowers at a great rate ; but the Vines did not prosper as I expected. They were planted outside, and by a professional gentleman who made me a present of them ; but the professional planting did not make them grow as they should have done. I waited patiently for about three years, when I began to give my attention to Grape-growing and read much about it, and wondered much I did so little myself compared with others. At this time I paid off my gardener and took the matter more into my own hands. My occasional assistant was ignorant of the treatment Vines required, so I had no prejudices to contend with, and we got on very well together, and still continue to do. I commenced with the roots of my Vines, which I found had been put in almost as they came out of the pot. This blunder I rectified to the best of my knowledge, and along with slightly altering the composition of the border, I got them to grow, and very soon had good fruit. This, after all the vexations and disappointments I had endured, stimulated me afresh, and my interest in Vine-culture increased. My next difficulty was the pruning of the Vines, and for this I called in assistance from a large establishment close by. After two or three years of this, I found the system adopted by my professor was more productive of leaves than fruit, and his culture generally more likely to consign the subjects on the stage beneath to utter darkness. Well, what was I to do now ? To try anybody else was a doubt-

ful good ; to do without anybody I feared to risk—in plain words, I hadn't confidence in myself. I had none in those about me. I kept on reading, however, until fortunately I became acquainted with the editor of the 'Gardener' and his book on the culture of the Vine, and I resolved to follow his system and do without other helps. When pruning-time came again, the roof of my vinery was as if all the railways of the kingdom were mapped out ; what with junctions and crossings and sidings, I was at my wits' end, for there was no terminus. However, shears in hand, I went to work, and cut right and left, with perhaps an indication here and there that I might some time or other approach the system recommended. When all was done, I had the feeling that I had risked much in the quantity I cut out, although far short of what should have been. The next summer I sold £16 worth of Grapes, besides using what we considered necessary for ourselves. This I was vain enough to look upon as the reward of my own handiwork. Inspired with the idea that the thing was going to be a profit as well as a pleasure, I went at it with a will, and I commenced forcing earlier the following year, promising myself Grapes so early and so good that the price would be quite a fortune. In this I was doomed to disappointment, as the engineer of my vinery had evidently been as ignorant as myself as to the necessities of Grape-growing, and instead of putting in 4-inch pipes, he had put in only 3-inch, and this only along the front and one end. To get up a good heat, I used a sharper coal than I had been in the habit of using, which one night boiled the water over the expansion-chamber, and so thoroughly steamed one end of my house (which was divided into two parts) that the buds swelled rapidly, the laterals elongated, and the fruit showed, and then crined off with the exception of a few bunches.

This was another experience which taught me to be more patient and systematic. I am glad to say I profited by the lesson, and I have now this said house in good shape, with plenty of good wood, and get uniformly good crops of Grapes, but up to the present time not doing much more than paying expenses and the interest of the money expended upon it. This house may be considered the schoolroom in which I was taught my first lessons ; but as I built more houses, not only to gratify my taste, but in the conviction that Vine-culture might be made profitable, I must reserve until another time what more I have to tell of my successes and failures.

D. P. B.



SPIRAL TREES TO CULTIVATE.

(Continued from page 39.)

THERE is a peculiar interest in cultivating hardy trees that require to be educated, as it were, and will not, when old, depart from the original style of training. It greatly detracts from the interest of gardening that the ever-pressing necessities of routine work, in most private gardens, prevent gardeners from undertaking many deeply interesting operations that require systematic attention ; and I fear it is but seldom that the garden staff give much aid in carrying out *hobby-work*. Still we feel it is greatly to the interest of gardening to multiply superior objects that are not subject to decay, and do not incur much expense. We all like change—nay, it is a necessity of our progress and intelligent existence ; and if we could only fix upon certain things—like some tribes in Africa, who, in their high jinks, work off their effervescence upon some subject that will remain to remind of former enjoyment—we could add many points to a higher standard of garden art. There are some lofty critics who even now repeat in set phrase the satire of R. P. Knight, “Gardeners are a set of mere labourers, ignorant of art and art-work.” Well, taste is a very general term, and in advocating the application of more art in the culture of spiral trees we do not discuss or try to establish principles of taste in the planting of such trees. I have long observed that the owners of such trees greatly prize them—small and large ; the subject is a source of daily delight to myself, and I am charmed with the submission with which the spiral trees I have under culture yield to art, and grow up with a dress and elegance that show art and nature working harmoniously to produce a more distinctive and interesting character.

Every year we see the owners of gardens attaching more importance to variety, and our endeavours as cultivators should be directed to the development of such substantial variety as to excite curiosity and remain objects of interest.

“Groves ever please, but most when placed aright ;”

and to place spiral trees “aright” we would first seek to cultivate the trees right. The great weakness in modern flower-gardens is that the chief objects employed for effect are frail and short-lived, and give no impressive association such as arises from long-known objects of permanent character. It has been a study with the writer to work in with the flower-garden beautiful spiral trees, and competent judges have expressed admiration of what has been done, and consider the beauty of the garden greatly enhanced ; but our work is yet in infancy, compared to what it will be. We have now a style of trees in hand

which in beauty of form and shade of colour, with variety of twig, surpasses the old varieties now planted out.

Trees will ever remain a grand distinctive feature of the country residence ; but trees require large space, while great variety of spiral trees can be planted in limited space, and near mansions where trees proper would destroy light and beauty. Of the vast number of trees introduced since the establishment of the Horticultural Society of London, there are only a very few that will grow up in a distinctive character, to alter or change the effect of our forest scenery. One of the most glorious trees that has been seen in our climate—the *Pinus insignis*—is no longer to be classed with forest scenery. It may remain as a glowing ornament in snug corners in the south, but it will hardly again be planted in the north ; and from accounts we hear that the great Californian Cypress fared little better after the frosts of last winter. But we have a splendid list of the class of spiral trees that over the United Kingdom stood the severe frosts of last winter without scathe, and it is to the style of growth and varied beauties of this class of trees that I wish to draw special attention. There is hardly any garden that does not now possess quantities of the kind of plants I refer to, yet we do not often find the trees planted so as to produce good effect, or bring out the natural beauties of the plants. A common practice is to plant such trees among or with “*New Coniferæ*,” and not long ago we saw planted out in a pleasure-ground, side by side, *Thuja Lobii*, *Juniperus Chinensis*, *Retinispora ericoides*, and *Retinispora leptoclada*, close to *Cupressus macrocarpa*. We like to see such plants wherever we meet them, but such treatment destroys character and beauty.

It will not be out of place here to give an illustration of the ill effects of planting spiral trees in a flower-garden, to the destruction of the flower-beds and destroying the harmony of the garden. The garden I refer to was made or remade about eleven years ago. The plan was furnished by a professional designer, and the trees also planted by his directions. When I first saw the garden, about six years ago, the trees were huge bushes, standing in centres of beds, quite swamping all other effect. The varieties of trees were Irish Yews, *Cupressus sempervirens*, *C. macrocarpa*, *Biota Nepalensis*, and some Box-trees. At that time some of the beds were nearly filled with the trees. Notwithstanding such incongruity, and the weedy flowers that struggled round the trees, the owner would not sacrifice the trees until last year, when most of them were grubbed up, and the small circular beds given up to the trees, which should have been so from the first. It is the abuse of such trees that often deters gentlemen from planting them as chief ornaments in a garden. The

planting of them as centres in beds should only be done with special kinds, and on the system of annual removal.

Begin with the roots to make fine spiral trees. We never attempt to *stunt* the trees, but rather encourage free growth, and with this object plant the young trees on good fresh soil. As far as I observe, all the hardy sorts here thrive well on any free soil; it is the medium into which the roots are to fix themselves that is the important point. Take that truly elegant Cypress, *C. Knightiana*, and plant it in good soil; as soon as the plant begins to grow, it will throw out long naked roots, which make the plant difficult to lift, if of any size, from the open ground; the tree will present a rampant growth, with loose open branches. But place the young plant on a sod, as we are about to describe, and there will be found a mass of uniform roots; and the habit of the tree will be so much more compact, with the branches of that beautiful fern-like growth, that it requires a practised eye to recognise it as the true variety.

Our practice with young trees under training is simply to place each tree on a sod, which is laid just under the surface on the border. Through this sod is put a small stake; the roots of the tree are spread on the sod, and the tree tied to the stake; a handful of clean leaf-mould is put on the roots; a fair covering of soil, mixed with charred earth, is then firmly trampled over the roots, and well watering the whole completes the first operation.

We find the sods cut from where the Wood-rush grows dense, after they have lain in a heap for a few months, the best of all materials on which to plant trees with the object of transplanting. We have *Araucaria* trees several feet high growing on such sods that could be moved at any time with as much safety and facility as any plant in a pot. Any kind of peat sods are preferable to loam, as being lighter, and much longer of breaking up.

Such trees as we write of should be lifted annually, and no time is so good as May and June. If the operation is done in a workman-like way there will be no perceptible check to the growth of the trees. The advantages of transplanting trees in an active state of growth need not here be argued.

Now it may be said that such trees will grow as well by planting in the position that they are intended to occupy. The same argument would apply to our planting out our stove and greenhouse plants in prepared beds of earth, and this is done in some cases with advantage, but such practice is only suitable to things on a large scale; and the same may be done with spiral trees, but we want the spiral trees for a special object, where size is restricted, and elegant foliage desirable, with the greatest variety. By attending to a system of culture in a

young state many of the tall-growing trees of strict growth, among which are some of the most ornamental, can, from very small plants, in a few years be made into the most beautiful trees of the required size for the refined garden. Some I may here mention which are invaluable for fine habit and rapid growth, suitable for the smallest or largest garden: the Bhotan Cypress, *Cupressus Knightiana*, the Spanish, the Chinese, and *Thurifera Junipers*, are trees of great beauty, and require but little training to make them perfect in form. No mere pruning will ever make such trees, clothed with elegant dense foliage in a dressed state, unless the roots have first been put in order. We seek for the most perfect beauty of the tree, which can only be realised when the tree appears in a natural style of growth.

We have taken up so much space at this time that the concluding remarks on classification of spiral trees must stand over.

CHAS. M'DONALD.

(To be continued.)



NOTES BY THE EDITOR.

(Continued from page 54.)

FROM Thoresby Park we went to Welbeck, the princely seat of the Duke of Portland. The new gardens here were laid out some fifteen years ago by our old friend Mr Tillery, who still continues to add, year by year, to the glass erections. The kitchen-garden covers about twenty acres, including the immense ranges of hothouses of all descriptions. In the vineries we saw heavy crops of Grapes, the bunches not large, but numerous. Mr Tillery told us he preferred them small, and, to use his own expression, when they were large, he "winged" them, that is, cut the shoulders or wings off them, so as to have neat compact bunches, which look much better when dished than larger ones. How few of us can so curb our vanity as to copy Mr Tillery in this respect! We can, however, only afford space sufficient to take a glance at what is extraordinary; and under this category there may be placed three things at Welbeck.

In the first place, there is a peach-house of iron and glass against the outside south wall of the garden 800 feet long, and about 8 feet wide; the height at the apex being about 15 feet. It is a span, the wall forming one side, the front upright glass being the same height as the wall forming the other, with a span of glass on the top. This house has but one division in it. Peaches and Nectarines are grown against the back wall; and Plums, Cherries,

Pears, and Apples along the front. When we saw it in the end of August, the crop of fruit was ripe and abundant.

The second thing to which we must refer is—what shall we call it? Well, we have no name for it, nor did we ever see the like of it before. We will try and describe it, and our readers may call it what they please. Imagine, then, an enormous cast-iron circle, say 24 feet in diameter, and another circle about 20 feet in diameter, cast inside the outer one, but tied to it by parts of the casting; then set up some 200 of these, so as to form an immense tunnel; these circles being placed about 4 feet apart, and tied together by other castings, and covered with wires, to which to train Pear, Apple, and other fruit-trees, with a walk inside—this fruit-tunnel, if we may be allowed to suggest a name, being 800 feet in length. The trees had not been long planted when we saw them, but were making progress; and if they succeed well, the thing, as a whole, will be one of the horticultural curiosities of the age. Mr Tillery told us that the idea originated with his noble employer.

And third, and last, but most extraordinary of all, is the underground road being formed between Welbeck farm-steading, and the extremity of the park, near Worksop. This tunnel is being driven under ground for some miles in the level park; so that the workmen and others coming from Worksop to Welbeck, may not be seen walking or driving through the park. It is high enough to admit a man on horseback, and wide enough for carriages to pass each other in it, and is lighted and ventilated at short intervals. It is substantially built and arched over with brick, and when finished will have cost over £100,000. We saw temporary railways with trains driven by engines removing the soil that was being excavated to a distance. Altogether it seemed the most remarkable undertaking we had ever beheld.

On our way from Welbeck we called at Worksop Manor. We believe this fine old place belongs to the Duke of Newcastle, but is at present occupied by Lord Foley. The kitchen-garden is very large and old, and so are the houses, in many of which we saw good crops of fruit. The flower-garden occupies what was at one time the site of the old mansion; which, judging from the ruins of it still extant, must have been of great size. The bedding plants did Mr Miller great credit. We were specially struck with the health and beauty of a large bed of *Coleus Verschaffeltii* growing completely under the shade of a large Fir-tree. We advise our readers who may have a bed to plant in a similar position to give it a trial, not planting the bed till June, and then with short stocky plants.

From Worksop we took the train on the Great Northern Railway to

Grantham, thence to Stoke Rocheford, the seat of Christopher Turner, Esq., six miles from Grantham. Here, as on previous visits, we found the place in first-rate order and cultivation. The kitchen-garden is a very irregular piece of ground, by no means well adapted for a garden ; and from its low position, and the stream of water passing through it, it must be subject to spring frosts. There is a great amount of glass devoted to the cultivation of fruit and plants ; but from its scattered character it has not the imposing effect it would have if concentrated in one part of the garden. The crops of Grapes, Pines, Peaches, &c., were most excellent, but we cannot give details. What we must, however, describe is a fernery Mr Dell has recently constructed with all the ingenuity for which we know him to be remarkable. This fernery is under a glass roof 40 feet long by 24 feet wide, but the walk along it is made to wind so as to make it 62 feet long. The sides are built up with the most rugged stones imaginable ; and at every short distance there stands what ninety-nine out of every hundred visitors will suppose to be a most peculiar and new species of Tree-fern. A close inspection by an expert shows that the stems of these "Tree-ferns" are drain-pipes set on end, coated with cement, and then stuck all over with small rustic stones and shells, amongst which a little soil is placed, and the whole planted in some cases with *Morcanchia polymorpha* (Liverwort), in others with dwarf Lycopods. The drain-tiles are filled with a mixture of loam and peat inside ; and in these tiles so filled are in some instances planted *Scolopendrium vulgare*, in others *Lastrea filix-mas*, and, most beautiful of all, *Polystichum angulare cristatum*. This plant had fronds from 3 to 4 feet in length, and had all the appearance of a most beautiful Tree-fern. In recesses of the rock-work were four or five small cascades of water, and small pipes were so arranged that the whole place could be kept moist during the driest part of the year. There were no means of heating it, therefore the ferns were all of those sorts that are hardy or nearly so, and the collection of them was very extensive. Altogether it was as enjoyable a spot to spend an hour in during a hot day as could be imagined, and though hidden from the mansion it is close to it, nor could it be seen from any point till one got to the very entrance.

Stoke Rocheford mansion is a modern and very handsome building by Burn, containing many noble rooms. The library is especially so. In it Mr Turner showed us a chair with a silver plate let into it, with an inscription, stating that it was made of the wood of the tree from which the apple dropped that gave rise to the chain of thought in the mind of Newton, which resulted in the discovery of the law of gravitation. This great man has recently had a statue erected to his memory in Grantham.

The flower-garden at Stoke Rochford is in front of and around the south and west sides of the mansion. It was laid out by Nesfield, and is more to our taste than any example we ever saw of his style before. Nothing could be more exquisite than the state of bloom in which we saw the flower-beds, contrasting very favourably with such beds in Scotland last season, where bedding plants were anything but fine till late in September, when the few weeks of dry weather enabled them to rally considerably. The summer was much more propitious in England last year than in Scotland, making allowance for the difference of latitude.

From Stoke Rochford we visited Harlaxton and Belvoir Castle; but as we shall have a good deal to say about Mr Ingram's fine crops of Pears, and other matters, we must defer doing so till next month.

ERRATUM.—In last number, for "Earl Manners," read "Earl Manvers."



HINTS FOR AMATEURS.—MARCH

A DRY March is, in most cases, of great importance to cultivation of the soil. Many garden operations are carried on for several weeks to come, which are only done satisfactorily when the soil is dry and mellow. This is perhaps most applicable to seed-sowing. However, it is best to do this when the ground may be termed neither dry nor wet. This is known by taking up a handful, giving it a squeeze, when the marks of the hand will be observable, and then throwing the soil on the ground, it will fall asunder; but it is difficult to get heavy clay land into such a state, therefore it is necessary to save all old potting soil to be sifted finely, to use for covering small seeds at this season, when the weather is often very cold and changeable. Success is more certain when the ground has been well prepared and exposed for some time to the weather. One can hardly expect a good start in spring if the ground has been turned up sour and sodden, and seeds sown immediately afterwards. It is hardly possible to enter into all the minutiae of the various operations to be performed at the present season in gardens, however small, as requirements are so varied, localities and soils also differ much; but there are certain things that require attention, which, if neglected, will give the cultivator a very indifferent return for time, labour, &c. These we will attempt to deal with as simply and briefly as possible.

Ground should be ready for sowing Asparagus if required, Beans, Beet, Borecole (or Kale), Broccoli, Brussels Sprouts, Cabbage, Carrot, Cauliflower, Celery, Herbs (some kinds), Leek, Lettuce, Onions,

Parsley, Parsnips, Peas, Radishes, and Spinach. If sowing of Asparagus-seed is preferable to purchasing plants to be planted next month, well-broken rich deep ground should be chosen, drills drawn about $1\frac{1}{2}$ or 2 inches deep, and the seed (after being well separated from the skins) should be sprinkled thinly in the drills and covered up at once; but if it is required to remain to supply the crops in two or three years' time, the ground should be extra trenched and manured, and beds can be formed, leaving about 18 inches between each. If three rows, a foot apart, are sown in each bed, it will be found wide enough to be able to reach in to cut the produce without treading among the plants. Some prefer single or double rows, leaving spaces to get among them. We have seen good Asparagus grown under every system of planting, but the best was growing where a ditch had once been used as a receptacle for all kinds of garden refuse; and after the space was filled up, soil was placed over the surface and Asparagus planted, which received annual dressings of decayed manure and sprinklings of salt during the growing season. Beans for a full crop may now be planted, to succeed the autumn sowings, or those which have been grown in boxes, turfs, &c. Broad Windsor makes a good succession to the Early Long Pod. Borecole, or Kale, sow in ordinary seed-beds, finely prepared; if drills are drawn, the plants will not become so quickly matted, and the surface can be stirred as soon as they are through the ground. Cottager's Kale, Green Curled Scotch, and Buda Kale are good kinds of long standing, and, when the stock is true, are most valuable in winter, being so hardy. Beet may be sown in small quantities to come in for early use, but they soon run to seed if sown before late in April or early in May. The best we have tried are Dewar's and Nutting's (Sang's of some). Sow the seed in drills from 12 to 15 inches apart, according to growth of kinds. The seed ought not to be covered more than 2 inches deep. Any good light, rather dry, soil, free from fresh manure, suits Beet. Broccoli, to keep up a succession, may be sown in small quantities from this time up to the middle of June, though the main crops for late supplies are sown from the beginning to the middle of April. In very late localities the end of this month is not too early. Walcheren, if sown soon, will give an early supply when Cauliflower is becoming scarce. Walcheren, White Cape, and Grange's Autumn are among the best early kinds. Snow's Winter for second crops, Knight's Protecting, Osborn's White, Waterloo, Backhouse's Late, and Carter's Champion, will keep up a succession till May and June. Sow in rows or beds, covering with about an inch of soil. Brussels Sprouts, sow in the middle of the month and second week of April; drills 9 inches apart and 1 inch deep will answer well for these. A pinch of Cabbage may be sown

in an early border to succeed those planted in autumn or now. Early Dwarf York, Little Pixie, M'Ewan's, and Enfield Market, will meet the wants of all. It is some time since we saw a true stock of Cabbages, except what private growers have saved. Fearnought is a very useful hardy Cabbage, and though coarse in appearance, the hearts are of the finest flavour. Carrot may be sown for drawing young. The main crop can be sown in April. They do well in free deep soil which has been well prepared for previous crops. Early Horn, James's Scarlet (which is a handsome kind), Altringham, and Long Surrey are generally cultivated in gardens. The latter is the longest kind suitable for a general crop. Cauliflower, sow on an early sheltered position, and give protection with evergreens, mats, or nets in severe weather. Early London, Stadt-holder, and Walcheren are among the most serviceable kinds; and if a pinch of each is sown same time, they will closely succeed each other. Celery may be sown in a box or pan, and brought forward steadily with a gentle heat; if hard forced, this will likely cause premature seeding. Little covering of soil must be given to such small seeds, and water with a very fine rose. Cole's Crystal White, Cole's Crystal Red, and Turner's Incomparable are very useful kinds. Dryness and extreme temperatures must be guarded against. When the seedlings are fit to handle, they may be pricked out in a frame, or under hand-glasses, where they can be protected, allowing 3 or 4 inches between each plant. If manure or decayed-leaf soil is placed over the surface, then 2 inches of fine soil, the seedlings will do well and be fit to plant out with good balls when frost is past. A month later will do for sowing to give the late and principal supplies. Herbs—such as Basil, Sweet Marjoram, Knotted Marjoram, &c.—may be sown in a gentle hotbed, and treated like Celery, except the using of manure; and when the plants are sturdy and well hardened, they may be planted out in May or early in June, when frost is not likely to injure them. Other hardy herbs may be sown under protection and kept growing, and plant out where they may remain for years. Many kinds can be increased by dividing them and preparing good soil to plant them in. They will grow almost in any position, but soon become patchy if neglected. Mint (which is always useful) may be lifted when the tops begin to peep through the soil; then well manure and thoroughly break the soil. Break off the tops with a piece of healthy root to each, and carefully plant them a few inches apart; they will make much finer leaves than when allowed to grow as they have stood for some years. Leeks, as directed last month, as a small seed-bed, will plant a large space. It is well to make several sowings in case of failure. Lettuce may be sown where they

can be protected. Cover the seed thinly, and prick them out in preparatory beds before the young plants get matted ; protect them from frost till the plants are strong. Bath Cos (black-seeded), Imperial, White Cos, Moor Park, and Drumhead, will give a good supply, being some of the best kinds. Onions, sow as directed last month. We often make two or three sowings in case of failure, but the earliest are generally best. Parsley vegetates slowly, and for first supply an early position should be given. Edgings may be formed with Parsley, and any spare corners answer well ; but to have the leaves large, plenty of manure must be given. Soot is of great service to this plant when sprinkled near the roots in showery weather. Parsnips, if not sown, may be got in as soon as possible ; but if small roots are preferred, this crop may be sown next month. Peas—to keep up a regular supply, sowings must be made every three weeks ; a second and third Early sown same time will give a succession. Good, deep, well-manured soil is necessary to keep Peas free from mildew ; and a good soaking of water, if the soil becomes dry, and mulching afterwards, will keep them longer in bearing. Sowing thickly is a great evil if the ground is good. Radishes, sow thinly on a warm border ; a covering with litter will keep off ordinary frost, but as the plants grow they will require to be exposed daily as the weather becomes warmer. The olive-shaped and turnip-rooted kinds are the best, as they do not become strong-tasted and tough so quickly as the longer kinds. Spinach may be sown at short intervals, as it soon runs to seed ; if sown between other growing crops, no useful ground will be used up which would suit other things. Most kinds of seed at this season are sought quickly after by birds, and ought to be protected ; perhaps there is nothing more satisfactory than nets, as they also break sharp winds. Finely-sifted coal-ashes, free from dust, will keep slugs in check ; red-lead and lime are often used for the same purpose. Sliced Turnips placed round box-edgings are good traps, and can be examined every day. It is a great mistake to sow seeds of any kind, when good, very thickly, as they are weakened very much in their young state, which they never fairly recover from. We prefer rows to broadcast for all small seeds, as air circulates among them more freely, and they are not so liable to become drawn up. It may be well to remind some that crops should be sown much earlier in northern latitudes than in the south. We could always sow a fortnight later in the southern English counties than in Scotland, especially beyond the Forth. The same also applies to well-drained warm soil compared with wet, heavy, cold soil. Plant out Cabbage from their winter quarters. Good rich soil gives more tender and finer Cabbage than poor soil. Draw drills rather flat, as for Peas, and place

the young plants in them from 1 foot to 2 feet apart, according to the size of the kinds. Large kinds can be planted thickly, and every alternate plant cut out for use when large enough, and a full crop can still be left. Cauliflower may be planted out about the middle of the month. If good balls can be kept to the roots, success is more certain. Drills 2 feet apart will do except in extra good soil. Plant in the drills, and when growth is going on, the hoe (when used among the plants) will break down the earth to the necks of them, which will be earthing-up enough. Waterings of soot-water help to keep grubs in check. Protection may be given with evergreen branches, flower-pots, &c., always taking them off when weather is mild. Short litter placed round the necks and over the roots will be of great service. We often pot Cauliflower-plants, and plant them out before they become pot-bound. No check is then given. Clear off all yellow leaves from crops which have stood the winter—such as Lettuce, Cabbage, Spinach, &c.; a good stirring with a hoe occasionally will be of great service. Rhubarb may now be planted, 3 or 4 feet apart, in well-prepared soil. Allow the crowns to peep through the soil, and protect from frost with litter. Roots which have been forced may be divided, if necessary, before planting. They will again be fit for forcing in two years' time. Jerusalem Artichokes may be planted the same as Potatoes, but not closer than 2 feet apart if good tubers are expected. Seakale, if to be forced in the ground, may be planted in threes, keeping each lot 2 to 3 feet apart. For lifting, 2 feet each way will be enough, and plant the roots singly. Seeds sown in rows make good plants, and when they are growing they may be thinned out to 2 feet each way. Pieces from 3 to 4 inches long will give fine roots in a season or two. Potato-planting may be proceeded with, giving sheltered positions to earlier kinds. The main crops may be left till the middle of next month.

Fruit-trees will not require much this month, except in early parts. Then disbudding will have to be attended to—which is, taking off superfluous wood-buds, leaving enough to give a regular supply of shoots to supply next year's fruit. This is more applicable to Plums. The young wood should be left on the under or upper sides of the branches, to keep them as close to the wall as possible; any growing right out should be taken clean off. If little nailing is desired, pinching may be resorted to—that is, pinching out the top of the wood when three or four leaves are formed. Plenty of fruit-buds are soon formed by this practice, and little knife-work is required; but pinching must be closely followed up. Peaches which have been kept off the wall with the view of thoroughly exposing the wood and keeping the flower-buds back, may now be nailed or tied up to the wall, keeping every

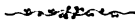
shoot straight, and not allowing too many of them to remain. It is very common to see Peach and other trees with the wood very much crowded—often five or six shoots for every fruit allowed to remain; this practice often leads to barrenness and premature decay of the tree. One shoot (which should be studded with flowers) is enough for every fruit to be left. Many fruit-trees (such as Apples and Pears) are planted this month, though they should have been finished before; and probably many are about to try "Cordons." A nursery firm in the south of Scotland have induced us to order a few dozens of these trees, they having been very successful with them in their private gardens, having abundance of fruit from the trees the second year after planting. The trees are trained upright with single stems and pinched in, and abundance of fine fruit has been the result. These rope-like trees are very useful in small gardens where space is limited. It is an old practice of ours to take a stem of a Fig, Peach, Pear, or Apple along any vacant space, which gives good crops of fruit where nothing might have been. We are also favourable to dwarf bush-trees grown like a break of Gooseberry-bushes, shading nothing and producing abundantly. Pinching and frequent lifting and root-pruning will keep fruit-trees to any size. Single rods loaded with spurs must be staked, and they can be planted thickly.

Rose-pruning may be done soon, keeping in mind not to cut strong growers severely back. Cut out all weakly and crossing wood. See that all standards or pillars are firmly staked. Those on walls, &c., should be trimmed and made secure, cutting out any stunted branches, and replacing them with young wood. Shrub-pruning is often done this month and next, or just before growth commences. Where fine well-grown trees are desired, they should be gone over, cutting back all strong shoots which are taking the lead, thinning out parts to let in air, cutting so that the work of the knife cannot be seen. Single plants are handsomer than masses, and are easier kept in order. Coniferæ and Hollies, or other upright-growing trees, should only have one top—all except the best should be cut off. Manure, as a surface-dressing, may be given liberally to many trees. Wellingtonias, Cedars, Yews, Araucarias, and many others, we find, are greatly benefited by good rotten manure given as a surface-dressing.

Chrysanthemums may be propagated without delay by cuttings; but where means are scanty, dividing the roots, keeping a few of the strongest shoots, is an easy way of getting plants, and they can be grown to any size. They require good rich loam and sand to keep the ball open. Give abundance of light and air. Any plants to be forced—such as Azaleas, Rhododendrons, Deutzias, Roses, &c.—may now be placed in a little moist heat, and they will come quickly into flower.

When the flower-buds begin to open, they should be taken to cooler quarters and kept drier overhead, giving plenty of moisture at root when required. All plants in cool structures—such as Cinerarias, Calceolarias, Primulas, &c.—which have filled their pots with roots, may be liberally supplied with clear manure-water, or shifted into larger-sized pots. Geraniums may be surfaced with well-decayed manure, or a little bone-dust, and good loam well mixed. Good plants can by this treatment be kept in small pots. Stake out the shoots before they become entangled among each other. More water will now be required; give it in the mornings till the nights become warmer. Fuchsias, Heliotropes, and many other plants, may now be started vigorously into growth to give flowers through the summer. If Balsams and Cockscombs are to be grown, a few seeds may be sown this month in heat. Single seeds placed in small pots are easily managed, as they can be shifted on from size to size without giving any check; though they may also be sown in light soil in a pan, and potted off when they are fit to handle—giving plenty of heat to begin with, and increasing the air as the plants get stronger. All small seeds should be covered very lightly in the pots and carefully watered, so that the seeds are not washed to the sides. Stocks, Asters, Mignonette, and Sweet Peas may now be sown; the two former in gentle heat, and grown on in frames or under hand-lights till they are strong and hardened for planting out. No plants do well if they are drawn up by heat or want of air. Many kinds of annuals may now be sown for border decoration, if required early, though May is early enough for many kinds to flower late in summer and in autumn. Carnations, Pinks, &c., which are to flower in pots, may now be shifted into a larger size. When potting any plants, see that the ball is not too dry; and if the roots have been pot-bound, try and undo them a little without breaking them. Place the soil equally round the ball.

M. T.



FRENCH ASPARAGUS CULTURE.

ASPARAGUS, as everybody knows, is grown very extensively in France. Every individual in possession of a piece of ground devotes a portion of it to its growth; so that, travel where you will—from Dunkirk to Perpignan, or from Strasburg to Brest—it is more or less seen. In fact, everybody grows, cuts, and sells it. The department of Seine-et-Oise, however, is the most talked-of portion of France, as having produced the largest heads of this vegetable. The Lhéran family of

Argenteuil have shown them 4 inches in circumference; but I do not look on this as the criterion of good cultivation—quite the contrary, as I know from experience that those overgrown heads of Asparagus, like all coarse overgrown vegetables or fruit, are not near so relishable and well flavoured as the medium-sized, that have been grown on more wholesome and less-manured ground. Many French gourmands, however, think otherwise, and relish these coarse Asparagus with great gusto, more particularly when they hear that the “Imperial Horticultural Society of France” has crowned them with a gold medal, which they do frequently. It is not my purpose here to criticise the flavour of this wholesome vegetable. Some are very fond of it; others, again, have an aversion to it. I think all will agree that, we have a much more wholesome and nutritious vegetable in the Marrowfat Pea—altogether a cheaper and more serviceable vegetable for the people. This is a vegetable quite unknown amongst the people of France; so also are the Scarlet-runner Bean, the Seakale, a good spring Cabbage, and Broccoli; scarce also are a decent Onion, a good Potato, a fine Cucumber, and—about the most useful of all for poor people—a good Leek. The Asparagus Kale, a most profitable hardy spring vegetable—nearly as good to my mind as Asparagus itself—is never to be met with. A good Turnip also is a scarce vegetable. These are a few of the good things that are to be found in nearly every cottage garden in Britain, while in France they are either scarce or nearly unknown. As a rule, the vegetables most common in England are scarce in France, and *vice versa*; but not to the same extent in the former, for I know of no vegetables common in France and comparatively scarce in England except Asparagus and Lettuce, and the latter only so in winter. I had nearly forgot to mention the Rhubarb as also another excellent addition to our English spring dainties when well grown. I remember my wife once giving a spoonful or two of this vegetable, stewed with sugar, to a Frenchman, who declared he never tasted anything so nice in its way; eaten as he ate it—with a piece of bread, and with a flavouring of Cloves—it is certainly as nice as stewed Pears or Apples.

The culture of Asparagus having become quite a mania in France, it may reasonably be supposed that the mode of culture adopted by the French gardeners is perfect. I believe it to be so; but, at the same time, the soil of Seine-et-Oise is peculiarly well suited to the requirements of the Asparagus-root; just as the soil in the midland counties of France is suited to the requirements of the Vine; and with the hot sunny days and cool dewy nights, with ordinary care in destroying weeds, and a few other minor attentions, it lives and flourishes to a very prolific degree, and continues doing so, with little or no manure, for thirty years. I have seen the roots of Asparagus 8 feet deep in

the inexhaustible calcareous beds of soil so common in this department. It will be seen, then, that the system in vogue is very greatly aided by nature, whatever may be said to the contrary : of course I am speaking of outdoor culture. In forcing an *aspergerie*, as it is termed here, or a field of Asparagus, if Vines have been growing on the land previously, no outlay is necessary further than lining the ground off and throwing out trenches 4 feet apart, measuring from the middle of the trench. The depth is regulated according to the consistency of the soil—or, in other words, the lighter the soil the deeper the trench, and the heavier the soil the shallower the trench ; in either case it must not exceed 18 inches in width : this allows the ridges to be cropped with light crops of Haricot Beans, early Potatoes, and the like. Every grower raises his own roots by sowing selected seed. The largest and earliest-ripened seeds are chosen. A bed of sandy unmanured soil is lined off, forming little furrows 12 inches apart, and the selected seed finger-and-thumbed in at least 4 inches apart. After the rake has been drawn over all, the seeds will be 2 inches from the surface. This operation is done on a dry day in February. By the end of March, a hoeing before the seeds germinate tends to keep the seed-beds clear of weeds, after which the young plants soon begin to show themselves above ground. The end of April and beginning of May brings hot dry weather. A slight mulching with decayed manure is now applied. After this nothing more is required but a little hand-weeding and repeated waterings in very hot weather throughout the year. At the period when they may be termed yearlings, with half an inch of growth, which will be about the end of March, is the time when the planting in the *aspergerie* takes place. The previously prepared trenches, having been well seasoned by a winter's frost, are now run over with a coarse rake, levelling the coarse clods of soil, which fall to pieces like slaked lime, and at the same time a good portion of this aired soil from off the ridge is sent into the trench. With this and a little rotten manure, little molehills are formed 16 inches apart. Three persons are necessary for the work. One takes his place at the seed-bed, lifting carefully with a fork the young roots and laying them in a basket, screening them from sun or winds with his blouse, and carrying them to the principal in the trench. This individual takes them one by one, and in a very neat and expeditious manner lays each root on a molehill—every root being laid out like an expanded hand. The third individual comes behind with a basketful of dry prepared rich soil. A good double-handful is placed gently over each root, and the planting is terminated. About three weeks after this the young roots are pushing vigorously, and the three-pronged hoe-rake is again brought

into use and run through on the ridges, allowing again a little of the soil to fall into the trench. The trenches are then in turn gone over with the same instrument or a common draw-hoe, levelling the soil and cutting up at the same time any weeds ; any such found around the crown of the Asparagus-root are pulled out with the hand. With these slight earthings-up, and an occasional hoeing, nothing more is required for this year. The ridges, of course, are planted with Potatoes, Salads, Beans, or Carrots, which require at the same time attention. In the month of December, if a good day can be found, the soil that has accumulated on the roots by the hoeing and walking on the ridges is taken away by a short broad-bladed hoe and laid again on the ridge. The crowns of the Asparagus are laid bare, and again a handful of light rich soil is put on them. Some prefer a quantity of rotten manure for this purpose. Nothing more is done till the month of February of the second year, when the ridges are again dug and cleaned for the year's cropping.

H. K.

(To be continued.)



NEW PLANTS OF THE PAST TWO MONTHS.

At page 28 reference was made to some seedling Thujas that had been shown by Mr Kinghorn, Richmond. They were raised from seed obtained from what was said to be Thuja Japonica of Nagasaki ; and it is worthy of notice that the seedlings are of a uniform character, and without any evidence of a sporting tendency. A specimen of Thuja Zuccariani was furnished by Messrs J. & C. Lee, for comparison, of larger and older growth, but the identity appeared by no means apparent. First-class certificates of merit were awarded to each, one of the best properties being their extreme hardihood. Juniperus Japonica, a close-growing and very handsome variety, also from Mr Kinghorn, got the same award. It appears to be one of the very best that have as yet come into our possession. The same award was given to Euonymus Japonicus latifolius elegantissimus, a pale golden-edged form of this shrub. It was one of Mr Fortune's importations of some ten years ago ; and should it prove thoroughly hardy, it will prove a welcome and valuable addition to the popular "pictorial trees" of the outdoor garden. Buxus nanus aureus, an apparently dwarf-growing form of the Tree-box with golden foliage, must be seen again ere a decisive judgment can be passed on it.

Two or three years ago, a hybrid Solanum, raised from a crop between *S. capsicastrum* and *S. pseudo-capsicum*, but with a habit of

an intermediate character, was produced at one of the London shows. This was further used to crossbreed with *S. capsicastrum*, and from the seed so obtained some good things have resulted—dwarfer in growth and closer in habit than the hybrid form, and much superior to *S. capsicastrum*. Two of the seedlings were recently awarded first-class certificates—viz., *Solanum pseudo-capsicum rigidum*, very compact and erect in habit, and producing an abundance of bright-red berries; and *S. pseudo-capsicum Weatherallii*, with venose leaves and ovate-pointed berries. The plants were obtained from seed sown in March last; but it cannot be depended on as perpetuating exactly the counterparts of the progenitor. From 500 seedling plants as many as 100 variations will result.

Violet Victory is one of Mr Graham's seedlings from that fine variety the Czar. The flowers are said to be larger, deeper in colour, and more fragrant than the latter, though the distinction appears to be more apparent than real.

Camellia Miss Baskerville, from Withington Hall, Cheshire, is a white flower slightly flaked with rose. As shown, it lacked build and symmetry, but perhaps may be seen in better condition. C. Florentine Beauty, a carmine-salmon flower, was scarcely so good as Valteverado, as shown.

Calanthe vestita nivalis, from Mr B. S. Williams, was awarded a first-class certificate, perhaps in view of what the plant was likely to become, rather than what it was as shown. The flowers are pure white, forming a compact and bold spike; and when grown large and well, it will be a grand acquisition to the winter-blooming Orchids.

Oncidium Marshallianum, from W. Marshall, Esq. of Enfield, was awarded a second-class certificate. Though distinct from, it greatly resembled *O. radiatum*, but there yet existed difference enough to justify the award.

Azalea François Dubois is a double-flowering variety, with showy salmon-scarlet flowers, and appears to be very free-blooming. This came from Messrs Smith of Dulwich, together with a novel form of *Primula Sinensis*, said to be a hybrid between the Chinese *Primula* and the *Polyanthus*. This, perhaps, is open to doubt; but the calyx of the flowers is unusually large, and holds the blooms on longer than usual.

The beautiful *Hippeastrum (Amaryllis) pardinum* has already appeared in three quite distinct forms. Messrs Veitch had the original type; Messrs E. G. Henderson's very nearly resembles this, while Mr B. S. Williams's, though not so far advanced in bloom, promises to be a very fine and striking variety—the flower somewhat larger in size than the foregoing, the colour deeper and more heavily distributed.

Chatsworth has just sent to London for exhibition a wonderful

plant, *Cœlogyne cristata*, large in size, and most densely and exquisitely bloomed. It has been recommended that the Lindley medal in the gift of the Royal Horticultural Society should be awarded to Mr James Taplin, for this fine exhibition of superior culture. R. D.



MELON-CULTURE.

IN submitting to the readers of the 'Gardener' the mode of management I have followed in the cultivation of the Melon, I do not pretend to promulgate any new theories or to demonstrate any new methods; nor do I even intend to inquire into the merits or demerits of the various ways the Melon is treated by different horticulturists. In this, as in many other things, circumstances must and will regulate the means to be used; but I believe the rules I have followed are attended with success not to be despised, and are at the same time easily understood, and as easily put into practice. It must be remembered, however, that this paper refers only to Melons grown as a general crop, not to those which are grown for early work, nor yet for those which are intended to carry us through to near midwinter.

Ours are a modification of "Macpherson pits," being built of brick, having a receptacle on the north side $2\frac{1}{2}$ feet wide by $3\frac{1}{2}$ feet deep for the convenience of adding fresh lining should such be deemed necessary. This we never have used, as we never yet saw the necessity for it. The north wall of the pit is pigeon-holed, so that if a lining was put in the internal portion of the bed would immediately derive a benefit from it. To regulate the surface temperature we have a 3-inch pipe brought from the plant-stoves behind, which passes round the front, returning by the back of the pit. This we find sufficient to keep the temperature from 50° to 65° during the most severe weather, even in midwinter; so that pits built after this fashion, besides being thoroughly adapted for Melon-culture, are at the same time good auxiliaries where a quantity of bedding plants is required in summer, as such plants can be stored in winter and grown to great advantage in them in spring.

We make up our pits after the usual method every spring—viz., with stable-dung and leaves, and after these have somewhat subsided we put three barrow-loads to each light of good maiden loam which has been cut for one or two years, to which we add about one-sixth of old mushroom-dung. In putting in the soil we raise the centre of the bed into a continuous ridge running from east to west, so that, when finished, the centre will be about 15 inches in depth, while at bottom

and top it will not be more than 6 inches. We now replace the lights, allowing them to remain night and day until a regular heat of about 90° pervades the whole of the soil. The point where my practice differs from that of most others now follows.

After sowing my seed, I place the pots into a cutting-frame or on the shelf of one of the stoves, under the full influence of the sun. In the course of a few days the young plants make their appearance; and as soon as they have developed their cotyledons we pot them into 4½-inch pots, putting two in each pot, and plunging each plant down to the seed-leaves. Care should here be taken to have the temperature of the soil for potting about the same as that in which the seedlings have grown. After they have been potted we let them have a good watering with water of a similar temperature, after which they are to be replaced upon the shelf in the stove, under the direct influence of the sun, there to remain till ready for planting. We never allow them to get pot-bound, as we believe by so doing we materially affect the future wellbeing of the plant. As soon as they show a few nice roots round the pot we consider they are ready for planting; and if the pits are in the condition to which I have already referred, they are planted at once. As soon as planted, they get a gentle watering to settle the soil round the roots, at the same time moistening the soil all over, as well as the pipes and walls, which last operation is done regularly twice a-day until they show bloom. I never use shading of any sort for Melons from their earliest stage up till the time when they are tossed out, because I don't consider it necessary; and further, because I consider it to be injurious rather than otherwise. But more of this hereafter.

Now that the Melons are planted, they receive the usual treatment with regard to ventilation, syringing, and watering—care being taken that they are at all times kept pretty moist at the roots, which I consider one of the most important points in their successful cultivation. As soon as the young leaders have made about a foot of wood, I remove all the small leaves around the base of the plant for 3 or 4 inches, as these I often have noticed are apt to prove nests for the propagation of those insects to which the plants are so liable, especially if they have been the least pot-bound previous to having been planted. By planting one pot in the centre of each light, we thus have a leader to train both ways in the pit—the one towards the top and the other towards the bottom, and these are allowed to reach their destination before the points are stopped, after which the laterals burst away almost simultaneously, and are pinched one joint beyond the fruit as soon as it shows itself. By this treatment we get all the fruit required set within three or four days of each other; and it is a matter of

great importance to do so, as it is seldom the blooms will set if there is any fruit of the size of a pigeon's egg upon the same plant. During the flowering season we of course withhold the syringe for a few days, only to begin afresh as soon as the fruit is set, which is regularly continued down till the time when it begins to ripen ; when it is again withheld, and a free circulation of air is allowed day and night when circumstances will permit, which is absolutely necessary for the thorough perfecting of the fruit and the raising to perfection the flavour of the Melon.

I will now revert to the subject of shading, which, as I said, I considered not only unnecessary but of itself injurious. Firstly, it must be quite unnecessary to shade a plant of any sort when it has been proved that it will live and do well without it ; and, secondly, it must be injurious to that same plant to be shaded, if practice proves that those grown without it are more robust and healthy, and less liable to disease than those which are, and such I am convinced is the case ; and I could easily get my sentiments endorsed by many gardeners who have seen the Melons here during the last two years. The best proof I now can give is to state the fact, that during each of these years I have grown thirty-six plants in this way, and never had a death amongst them until the fruit was gathered, and only in four cases during that time had I to use means to stop the damping at the collar, to which Melons are so liable ; and I doubt very much if I could have said the same had I used shading for them. By thus treating Melons they assume a far more robust appearance—the shoots are firmer and the leaves present a healthy and fresh look, equal in appearance to the bright green of a Tom Thumb Geranium. Before closing, I may inform the reader that from each plant I endeavour to get about 10 or 12 lb. of fruit ; therefore, according to the varieties, I get from four to six fruit, thereby, in a financial point of view, taking about £1. worth of value from each light 8 feet long by 3½ feet wide.

JAMES M'MILLAN.

ERSKINE GARDENS.



X

ON GROWING THE JERUSALEM ARTICHOKE.

MARVEL not, good reader, when I tell you that the common tuberous-rooted Artichoke of our gardens is a Sunflower (*Helianthus tuberosus*). The striking resemblance of its foliage to that of the common garden Sunflower will have been noticed by many who never thought it was so closely allied to it. There may and will be differences of opinion as to the value of this esculent for culinary purposes ; but by many it

is much esteemed, not only as a table vegetable, but also as an agricultural crop, for domesticated animals eat both the fresh foliage and the tubers with great relish, and by some they are considered not only nourishing, but fattening.

Now, to write on the cultivation of a vegetable that generally gets planted on some out-of-the-way piece of ground, as if quite capable of taking care of itself, may appear presumptuous ; nevertheless I venture to do so.

It has been said that that man is a benefactor to his race who causes two blades of grass to grow where only one has hitherto been produced ; and surely the gardener who devotes his efforts and skill to the production of better crops of a given vegetable even, is to some extent a public benefactor. I then proceed to give the results of my method of cultivating the Jerusalem Artichoke. I follow in the old track of growing them on some out-of-the-way piece of ground, or a spot on which scarcely anything else will grow ; but, previous to planting, it is well trenched, and plenty of rotten dung is worked into it as the trenching proceeds. This work of preparation for the reception of the crop is always performed by February, in which month the planting is done. Some tubers about the size of hens' eggs are selected, and these are dibbed into the ground about 4 inches deep, about 18 inches apart from tuber to tuber, the rows about 2 feet apart. As soon as the plants show themselves above the surface, the ground should have a good hoeing, and it should be repeated during the summer, as by a constant stirring of the top soil the crop is greatly benefited, not only beneficially affecting the quantity of the tubers, but their individual size also.

As one who has a great liking for this esculent, it is to me a source of regret, not only that it is not more generally grown for consumption, but also that it is often so carelessly and slovenly grown. The high qualities of the tuber are greatly enhanced by improved conditions of cultivation to a degree unappreciable by those who do not devote something more than ordinary attention to its growth.

As an ingredient in the manufacture of soup for the winter, this vegetable is by no means of small value ; and this is the more worthy of being pressed home in the face of a considerable failure in the Potato crop. Some of the best white soup it was ever my lot to taste was compounded of Jerusalem Artichokes, and it had the appearance of a dish of delicious-looking cream.

On economical grounds alone this vegetable is to be highly commended, as it not only produces a large and profitable, but also a certain crop ; and cattle of all kinds almost will devour with great relish the tubers that are too small in size either for table use or for planting.

Even in their raw state, pheasants and poultry will fatten on them at the time when fed with dry corn. In the case of pheasants it is simply necessary that they should be strewn about the woods, as the smaller game and birds do not seem to care for them.

Some growers adopt the practice of cutting off the stems about their middle in August, to admit more freely the air and light, and to impart benefit to the tubers in other respects. It is more necessary in close and confined and low places. From September the roots can be dug as required; but when the stocks have entirely withered, the crop should be dug up, and the tubers suitable for kitchen purposes be stowed away in sand for use during winter. Should it be the design of the cultivator to clear the ground entirely of the crop, for the purpose of planting in another spot, the smallest piece of tuber should be removed, as it will be certain to vegetate and appear in the spring.

QUIS?



ARDESIA CRENULATA.

SMALL plants of this form a beautiful object at this season of the year, grown in 6-inch pots and covered with about sixty of its brilliant berries. In the conservatory, entrance-hall, dining-room, or elsewhere, it is equally effective. Having to keep up a large stock of this plant for the decoration of a Parisian dining-room in which only fruit-bearing plants are allowed, I have thought a few remarks on its culture may be now in season. The lot of three hundred plants now doing service were raised from seed sown two years ago in pots of sandy peat. Bottom-heat was given to aid germination. By the end of June they were large enough to be potted in trebles in 4-inch pots, and placed in a frame, on a bed of leaves, in company with Melons. Simple ordinary attention as to watering and shading was observed, and by the end of November they had made a good head of leaves. A shelf in a small stove served for their berth during the months of December and January, allowing them rather to thirst than to sicken of water. The anniversary of their birth was the time of their second potting. Shaken or rather washed out of their pots, a sprinkling of sand over the roots, returned singly into the same sized clean pots, using sandy peat, again placed on the shelf, and syringed, was the work of an hour. They again demanded ordinary gardening care till the month of June, when a good dark-green growth ensued, well furnished with flower-buds. At this period a little attention in providing them with warm dry air, to insure the formation of the berries, was necessary. About a month sufficed for this. The frame on the spent hotbed is again

made use of. A moist warm confinement in this during the months of August, September, and October, with an occasional watering with weak guano-water, hurried the berries on to maturity. A temperate atmosphere, on the shelf of an early vinery at rest, tended to heighten the colour of the berries, and at the same time initiated them into the duties which they were shortly called upon to perform. H. K.



MUSHROOM-GROWING.

If we are to judge from what has recently been written on the cultivation of the Mushroom, we can arrive at no other conclusion than that it is a formidable affair—far beyond the skill of an ordinary gardener. We fear much that has been penned on the subject, instead of simplifying the thing, will mystify it. We find no difficulty in securing first-rate crops of Mushrooms with ordinary means—means within the reach of the majority of gardeners. True, we possess what is termed a mushroom-house, but we would undertake to produce equally as good crops in any moderately warm shed. The dung at our command frequently lies from ten days to a fortnight exposed to all weathers before we commence preparing it for our beds. If one-half of the bed is composed of pure droppings, we are satisfied—the remainder short dung. One of the principal points towards success is in making the bed when the material is in proper condition; if too wet, loss of crop assuredly. We rather lean to the dry side. As regards heat, 70° minimum with 80° maximum. There is no danger with an external temperature of 50° minimum and 60° maximum, with a moderately moist atmosphere. If the spawn is good, at the expiration of six weeks you will be rewarded with a good crop. We cover with from 1½ to 2 inches of any common soil—not particular for pure loam.

J. E.



SOIL FOR AURICULAS.

I CAN corroborate the remarks by the writer of the article on Florist Flowers in the January number of the 'Gardener' respecting the natural compost the Auricula delights in. I remember several years ago visiting a locality in North Lincolnshire where the soil is exactly of the nature he describes, and never since have I met with the Auricula in such vigorous condition—immense stools producing bloom most profusely and brilliantly. Flourishing with the Auricula were the double white, red, and lilac Primrose. Anemones grew along with

these most luxuriantly, blooming in early spring. How seldom we meet with a collection of these denizens of early spring now in good condition! They seem nearly banished from our gardens to make room for our brilliant summer occupants. JOHN EDLINGTON.

WROTHAM PARK, BARNET.



TROPÆOLUM TRICOLOR.

SIR,—Having noticed in the 'Gardener' for February how to propagate the *Tropæolum tricolor*, I beg to inform you of another way. When the tuber is ripe and taken out of the pot, put it into a box or desk, or any place where it can be kept dark and secure from mice. In a few weeks it will commence to grow. If a strong tuber, it will perhaps throw out three or four stems. When about 18 inches long, cut them off above the eye next the tuber (that eye will soon break again); lay the young blanched stems round on the surface of a pot prepared for them, leaving the points standing an inch above the pots; cover the stems with half an inch of fine soil mixed with silver sand. The pots can stand in a greenhouse or cold frame. If watering is carefully attended to, in three or four weeks they will begin to grow, and will require a small branch to support them. When ripened off, you have a tuber at each joint.

About twenty-two years ago I got a tuber from Mr Rutherford, at that time gardener to the Earl of Northesk at Ethie House, with instructions how to propagate it. Since that time I have imparted the secret (if a secret) to many a young gardener as well as many old ones.

Another plan similar to yours, which I found out myself, is—instead of cutting off the blanched stems (if not blanched they will not form tubers so readily), plant the tubers, and lay the stems round on the surface, covering them with fine soil and silver sand as in the former case, leaving the point out, which will get green in a few days and run up the trainer, and a tuber will form at each joint.

WM. CRUDEN.

KINNAIRD CASTLE.



TUSSILAGO FRAGRANS.

TO THE EDITOR OF THE GARDENER.

SIR,—I beg to call your attention to the value of *Tussilago fragrans* as a plant for plunging in vacant flower-borders during the winter season.

During the last spring I put about fifty plants of it into large flower-pots, and left them in a neglected corner of the shrubbery during the summer and autumn, and when the bedding plants were removed in November, I plunged them into one of the borders; and I can assure you that at present the spikes of flowers and young leaves of a pale-green colour look very neat and pretty, besides affording a sensible fragrance when the sun is out. Great care must be taken to prevent them from throwing their roots over the sides of the pots; and they must be removed before April, as the plant will soon run over a border if not confined in pots. It requires no trouble or care in the way of cultivation. I am now putting some roots of it into large pots for next winter.

J. GILBY.

BEVERLEY.

TRITOMA UVARIA, for Game Cover.

SIR,—About noblemen's and gentlemen's places, where hares and rabbits are numerous, there is often great difficulty in finding plants which these creatures will not eat. We have a great length of drives in the plantations where plants are required for decorating their sides. Rhododendrons are no doubt most useful and largely employed for that purpose, but they flower in the early part of the season, and we also require plants which will flower in autumn when the nobility and gentry are generally enjoying the beauties of their country residences. In the spring of 1866 we planted *Tritoma uvaria*, knowing that it would have a telling effect in groups among the Rhododendrons, but at the same time fully expecting to be under the disagreeable necessity of putting wire around them in winter, as they are planted in the principal preserves, where both hares and rabbits are very numerous; but to our no small surprise and delight, up to this time, January 1868, neither hare nor rabbit has eaten them, which we think is sufficient proof that there is something in or about this plant which is unpleasant to their taste. Such being the case, we think *Tritoma uvaria* may also be a most useful plant for game cover, and we are now preparing to plant it largely next spring for that purpose. Having observed that the pheasants are very fond of making their nests under its long arched leaves, we think that other sorts of game would be equally ready to take advantage of the same covering if they had the chance: hence our reason for planting it for game cover.

T. LEES.

THE GARDENS, TYNNINGHAME.

**SATURDAY HALF-HOLIDAY FOR GARDENERS.**

I HAVE often wondered that gardeners never try to get the Saturday afternoons for a few hours' recreation; it would, I am sure, be of great advantage to themselves, and little or no disadvantage to their employers—the time asked for being so trivial that, if once granted, there would be no loss, for men would work with energy, and would soon make up for the three hours of play. We want something to rouse us from the old-fashioned, slothful ways of our fathers. This is an age of progress, and why not let us progress too, if we wish to abide by the times, and not be made the laughing-stock of all mechanics? More than that—I know that we are held up to ridicule, as having no will of our own, being afraid to ask it for fear of dismissal. That there are some such amongst us I know to be the case. At a meeting of gardeners last summer, I proposed the Saturday half-holiday, when I scarcely got a hearing, and was told it might do with me, but with none other in the meeting. (I intend bringing it forward again at a meeting this week.) If these parties cannot cease from labour on Saturday afternoon, how do they ever get to church on Sundays and fastdays? Something must go wrong in their absence, or the houses and plants by some magic must take care of one another. Now, if all head-gardeners throughout the country would go to their employers and state the advantages to be gained, they would find few dissenting voices. Not long ago I had some conversation anent it with a gentleman who employs gardeners, and he said that it was our own fault for not asking it; if we would only ask, it would be granted.

G. M'D.

GREENOCK, December 18, 1867.

[Our correspondent must make out a much stronger case before he has any chance of being seconded by gardeners themselves, who, with much good sense, prefer to let matters remain as they are. There are few gardeners in the country, where circumstances will admit of it, that do not get from a few days' up to a week's holidays during the year, and at such a season as best suits their tastes, either to go and visit their friends, or those gardens within their reach that are most likely to afford them an insight into any department of horticulture. Now, we submit, that for gardeners—who cannot put in the plea of confinement during the rest of the week—this is of greater advantage than a few hours during the Saturday afternoons for nine months of the year. And while treating of this subject, we strongly advise employers of gardeners to grant them at least a week's holiday every year; and in the case of master gardeners, to pay them reasonable travelling expenses if they are visiting other gardens; for we assure them that, if their gardener is what he ought to be, they will receive an ample return, with interest, in the increased enthusiasm as well as information such visits almost invariably lead to. This would be more to the advantage of all concerned than a Saturday afternoon, which in most gardens could only be granted to a portion of the men, and even to them at much inconvenience, involving the watering of plants on the Sunday that might have done without it till Monday had they been watered on Saturday afternoon.—ED.]

REVIEW.

THE FARMER'S DIARY, REFERENCE-BOOK, ALMANAC, AND PRICED LIST OF MANURES, FEEDING-STUFFS, &c. &c. By M'LEAN & HOPE, Timber Bush, Leith.

This pamphlet should be in the hands of every farmer and gardener in the kingdom, seeing that it is replete with information as to the qualities and adaptabilities of all the artificial manures of the present day, founded on analyses by the most eminent chemists, and thoroughly reliable. A great number of experiments with manures, conducted by our most scientific farmers, are detailed, and the results given. It also contains a great variety of general and agricultural statistics, with lists of fairs and markets. As a whole, it is a most useful pamphlet for the farmer's guidance.

Notices to Correspondents.

In the last number of the 'Gardener' I see that you can get no information as to the perfumed fibre of the Turkish Baths, I therefore hasten to send you some herewith. It is in reality the East India "Cuscus" or "Kusskuss," a grass root very largely used throughout the East. We keep it in our wardrobes on account of its delightful fragrance. L. W.

If "A Subscriber from Lancashire" will send us his address, we will send him the fibre sent to us by our correspondent "L. W."

A SUBSCRIBER FROM THE FIRST.—To prevent the ravages of Gooseberry caterpillar, watch for its first appearance, and when discovered, get a quantity of pounded hellebore and dredge the bushes with it early in the morning, while the

dew is yet on the leaves. This will kill all the caterpillar on them, and prevent the laying of more eggs by the fly. A pound of hellebore will protect 150 good-sized bushes. We have never found the remedy fail. Some prefer mixing the powder in water and syringing the bushes; either way will do.

J. D. P.—If the seed you have of *Gentiana verna* is more than a year old, it is not likely to vegetate. This beautiful little plant is scarce. Mr Thomson, nurseryman, Ipswich, may be able to supply you with a plant of it, and probably Mr Stark of Edinburgh may have it.

A CONSTANT READER will see that we have an article on Melons this month that may suit him.

ROBIN ROW.—We grow the *Sarracenia*s in pans 3 inches deep, in soil composed of peat, chopped sphagnum, and broken crocks; and we set these pans with the plants in them in others with water in them. The shady corner of a greenhouse is a good situation for them, or a cold pit from which frost is excluded. Remember that they are marsh plants.

R. M'L, near Driffeld.—You are quite right about your Vines. You had better make a new border and plant new Vines, than attempt to do anything to such old plants whose roots are so far astray. Plant a set of supernumerary Vines, and you can have a fair crop in the house the second year.

Sir,—I shall feel very greatly obliged if you will have the goodness to tell me where I can get some really good *Polyanthus*-seed. I have a large stock of plants with many very fine varieties, but I want new strains. I would also like to know where I might obtain some first-rate *Auricula*-seed. I hope you will not think me troublesome. I have had several packets of what was called prize seed of *Polyanthus* and *Auricula*, but never raised a plant from them that I would keep.

RICHARD C. GARDNER.

[We cannot say where such seed can be had. Perhaps those who have it will serve themselves, and oblige our correspondent, by advertising it.—ED.]



THE GARDENER.

APRIL 1868.

FRUIT-CULTURE.

(Continued from page 98.)

THE PEACH.



CHARACTER AND HISTORY.—The Peach (*Amygdalus Persica*) belongs to the same genus as the Almond (*Amygdalus communis*) and the Nectarine. The fruit of the Peach-tree is, when properly cultivated, one of the most delicious that a temperate climate such as ours can produce, and well repays any amount of labour bestowed on its management. The Nectarine is but a variety of the Peach. The latter has more or less down on the skin of the fruit; the former has none, but is perfectly smooth. As the same cultural treatment suits them, we shall not, in that respect, refer to them separately.

There are two very distinct classes of Peaches—the one known as Freestones, the other as Clingstones. The former have melting flesh, which is easily detached from the stone; the latter have rather stringy flesh, and the strings are firmly fixed to the stone. As a rule, the former class of Peaches is much superior to the latter, and the same rule holds good in the case of Nectarines.

Several writers have affirmed that they have seen Peaches and Nectarines growing on the same branch, the one sporting into the other. We have never seen this, but we have no reason for doubting the statement. It has even been asserted that the Almond has been known to assume the character and appearance of the Peach, indicating that probably the Almond is the “head of the house;” and this pro-

bability is strengthened by the fact that we come much earlier in contact with the Almond in history than with the Peach, reference being made to it in the Bible, where, in the 12th chapter of Ecclesiastes, it is used as a familiar illustration. Theophrastus is the first writer who refers to the Peach, some three hundred years before the Christian era; and he considered Persia its native country, though De Candolle gives reasons for thinking it came originally from China. It is, however, more probable that Persia is its native country, as it is of others of the natural order *Roseaceæ*, to which it belongs. It is not a little remarkable that the majority of the members of this great and important natural order come from countries adjacent to where geographers generally suppose the Garden of Eden had its existence—the Peach from Persia, the Cherry from Pontus in Asia, and the Apricot from Armenia,—the Rose itself being pre-eminently an Eastern flower.

At the present day the Peach is cultivated in all the temperate climates of the world where man in a civilised state has established himself. In the south of France the tree ripens fine fruit as a standard. In the latitude of Paris it requires a wall to bring it to perfection, as it does in our own country. In America there are immense Peach-orchards as standards, where the trees yield enormous crops the third year after they are budded; and large orchards of them are there formed by merely sowing the stones. As many as twenty thousand trees may be seen in one orchard raised in this way; but they wear out and decay much sooner than when budded on the Plum or Almond as a stock. The fruit is dried in America, both for home use during winter and for exportation; but in this form it is only fit for culinary purposes.

The Peach was introduced to England about the year 1562. It is by no means a long-lived tree. We have never met with any examples of it that we had reason to consider over forty years old, though there may be trees much older than this in the country.

Soil suitable for the Peach.—Like the Pear and the Plum, the Peach thrives and bears best in a strong calcareous loam on a well-drained subsoil. The soil for the border should be taken 3 inches thick from an old pasture. If clay is in excess, a portion of it may with advantage be charred and mixed with the other, to prevent its becoming too hard and compact when trod upon. When it is of average quantity in this respect, we advise no admixture of manure with it. It should be stacked one year, then chopped down and wheeled at once into the border. In light sandy soil the fruit never attains the size it does on heavier soils, and the trees are more liable to suffer from summer droughts, especially where circumstances will not admit

of the border being mulched to check evaporation, as is too frequently the case, from the fact that fruit-tree borders are almost invariably cropped up to within 2 feet of the wall—a practice that is most detrimental to the trees, seeing that it necessitates the digging of the soil every year, and sometimes twice a-year, to the destruction of the roots of the trees that are within reach of the spade, forcing the tree to depend on those roots that are deeper down in the border, and less under the genial influences of sun and air. In most gardens it is, however, difficult to avoid this bad practice; for, much as good wall fruit may be desired, early crops of vegetables are in equal request, and the gardener has no choice except to make a sort of compromise between the roots of his wall trees and early Peas, Potatoes, Cabbage, and Cauliflower. This practice requires a radical reform; and we think it might and will be effected ere long by avoiding the practice of cropping fruit-tree borders with early vegetables, growing them on raised banks sloping to the sun, and sheltered behind with Yew hedges, having a dwarf wall between the roots of such hedge and the border where the vegetables are grown. In other cases temporary fences to protect vegetables from north and east winds could be made of wood; and where brick is cheap, dwarf brick walls might be built, in which case the border could be cropped to the very base of the wall, which cannot well be the case where there are fruit-trees on the wall.

Formation of Border.—This is a matter of much importance, and deserves corresponding attention. If the natural soil is unsuitable, it should be excavated to the depth of 2 feet, with a slope from the wall of 1 foot in 12. If the subsoil is at all damp, it should be well drained with drains about 20 feet apart, not running right from the wall to the walk, but a little diagonal—say the one drain strikes the walk opposite where the next starts from the wall. All these drains should be 12 inches deep, and laid with 2-inch pipes and collars out to the walk, where they should enter the main drain, which should be a 4-inch pipe-and-collar drain. The drains should be filled in over the pipes with broken stones or brickbats. In some circumstances it may be advisable to concrete the whole surface of the space excavated for the soil of the border, as when it is composed of sand of a light easily penetrated character, or when it is of a gravelly nature, abounding in iron. In either of these cases, concreting will be of advantage; and it may be effected by mixing three parts of washed gravel and one part of lime, making it to the consistency of mortar, and spreading it equally over the surface of the ground to the thickness of 3 inches. In a few days this sets, and over it, for purposes of drainage, may be laid 4 inches of brickbats or small stones, on which the first course of soil should be fresh-cut sods, laid with the grassy side down. On this

may be laid the soil prepared for the trees, to the extent of half way across the border—say 6 feet ; and supposing the border to be 12 feet wide, the other portion can be filled in with the best of the soil that has been excavated in preparing the site for the border.

As the trees grow, whether Peaches or other wall trees, a trench can be taken out once in two years, removing, say, 2 feet wide of the inferior soil next the new ; and on such occasions examine the roots of the trees a little way back, even into the new soil, and raise such as are going too deep, and cut back any that are excessively strong. In this way the roots can be kept near the surface, and the trees root-pruned when growing too much to wood and too little to fruit. The trench cut out for this purpose can be filled in with fresh maiden loam, if such can be had ; if not, use such as has been exposed to a winter's frost, from some of the best soil available. Repeat this process till the border is all occupied by the roots of the trees.

Instead of digging over the surface of fruit-tree borders, it is much the best way merely to keep them free from weeds by the use of the hoe ; and instead of digging rank manure into the soil, lay a thin mulching of rotten manure over the surface. This has the double effect of enticing and keeping the roots near the surface, and of preventing excessive evaporation during hot weather. W. T.

(To be continued.)



CULTURE OF THE CHRYSANTHEMUM.

CALENDAR OF OPERATIONS.

(Continued from page 74.)

March.—The young plants struck in November or December, and intended to form specimens, will require about the middle of this month to be shifted into a size larger pots, using the compost described in the January number. Place them again in a cold frame, at such distances apart that one will not touch the other. Keep the frames close for a few days until they commence rooting in the new soil ; afterwards give plenty of air on all favourable occasions, closing the frames early in the afternoon, so as to retain the sun-heat as long as possible. Smoke with tobacco-paper at least twice each month whilst the plants are under glass, whether green-fly, &c., appear or not, as I find prevention to be far better than cure.

April.—During this month the plants will require twice shifting—say during the second and last weeks of the month—using a larger

pot each time, giving them the same general treatment as in March. Training must now be commenced—that is, bringing down the lateral shoots by attaching them to a cord or wire strung round the rim of the pot. They (the laterals) should be stopped after every sixth joint, the point being carefully taken out without injuring any of the dormant buds. Previous to shutting up for the night, be careful the plants are well watered, and also sprinkled over the foliage so as to insure a rapid growth; as I consider, if the frame of the plant is not formed this month, it cannot afterwards be brought to perfection.

May.—The plants will now require hardening off, by removing the lights from the frame during the day, and replacing them in the evening. Select the ground for plunging the plants, choosing the most sheltered situation, with a southern aspect if possible. Great attention should now be given to training, going carefully over the plants at least every fortnight, tying the shoots down regularly, guarding against their snapping, as when in full growth they are very brittle. Continue stopping at every sixth joint they make. Use good supports to prevent accidents, keeping the branches open and free to admit air. Syringe and water as before every evening. It will now be necessary to shift them for the last time, using 12-inch pots for the large-flowered varieties, and 10-inch for Pompons; compost as recommended in previous number. When pyramid plants are required, it is necessary to make a frame of stakes according to the size of plant wished for; the fewer stakes used the better. Carefully preserve the leading shoots and laterals, and tie them equally over the frame. The lower laterals must not be allowed to exceed 5 inches in length—the same for the middle branches; but the upper ones will not require any shortening unless they become too vigorous, in which case they must be stopped or trained downwards. In some cases where the plant is very strong, the lower laterals and also some of the upper branches will require a second stopping; this will insure a larger quantity of foliage at the base. By the time the buds appear, the plant should have assumed the shape of a perfectly covered and graceful pyramid.

June.—Plunge the plants outside in the chosen spot; attend carefully to the watering, syringing, and training. In this month they will all require their last stopping—the large-flowered sorts about the middle, and the Pompons the last week, of the month. Syringing should now be done three or four times a-day, to obtain as many breaks as possible; but should wet weather set in, this will be unnecessary, as the natural moisture will be more advantageous. The greater number of breaks or laterals caused by this stopping, the larger will be the number of flowers.

July.—Attend to watering and syringing as in June, also to the tying and training. Once each week syringe with weak tobacco-water or Gishurst's compound. Turn the plants round every three or four days, so that all sides may receive an equal share of the solar heat and light. In training, avoid a great number of sticks in the pot, as they materially injure the roots; hoops of wire will be found to answer the purpose much better.

August.—Earwigs and caterpillars will now become troublesome; care must be taken to destroy them as soon as they appear, or they speedily cause great destruction to the points of the shoots. The former may be caught by placing broad bean-husks amongst the plants, or small flower-pots in the manner usually employed for Dahlias; these should be looked over each morning. The caterpillars must be sought and caught by hand. Other operations as in July.

September.—By this time the plants will have nearly ripened their wood, and the crown and side buds will appear. If large flowers are desired in preference to a multiplicity of small ones, only the crown bud should remain on each shoot, those under or near it being removed carefully, avoiding injury to the point. For exhibition purposes, or indeed for general decorative effect, this method will amply repay the grower for his trouble. The plants should still be examined and kept clear of insects; green-fly, thrips, caterpillar, earwigs, &c., may still do much injury both to flowers and foliage. Commence watering with weak liquid sheep-manure, mixing a little soot with it. Water twice or thrice a-week, increasing the strength a little each week until the flowers begin to expand; syringe on warm evenings.

October.—Finish regulating and tying the plants. Go over again carefully and rub off all buds not required, or that are imperfect; destroy earwigs, &c. About the middle of the month, place the plants under glass. Give abundance of air on all favourable opportunities. Continue liquid manure, using it of the same heat as the house the plants are in, but discontinue at once when the flowers are opening.

November.—Most of the plants will now be in flower. Ventilation should be given as last month, as it is absolutely necessary; for without it the blooms will get damp and flimsy, and lose their beauty, and the foliage its green healthy appearance. From the 12th to the end of the month, the Chrysanthemum exhibitions take place; those selected for this purpose should have their blooms secured with a nice green stake at equal distances over the plant. This should be done at least ten days before the show, so that the foliage may resume its primitive state, and not appear distorted and twisted, as it will if done only a day or two before the exhibition. This tying up is very

necessary, as the weight of the flower is too much for its footstalk, and if not supported, only the back of the bloom is seen.

Directions for December, January, and February have already appeared in the November and January numbers of the 'Gardener.'

THOMAS HIGNETT.

(To be continued.)



SPIRAL TREES TO CULTIVATE.

(Concluded from page 121.)

IN concluding the subject of spiral-tree culture, I wish to say a word more on preserving the style of spiral trees as they grow up. When such trees as are here spoken of are planted in backgrounds, the natural habit being fixed before leaving the nursery-ground, the trees will grow up into perfect form without the pruning-knife; but in planting in foregrounds, by the sides of walks, and in connection with the flower-garden, a system of pruning will be necessary to carry out uniformity and dress. To attend to this is interesting pastime; and it can be done at any time without danger or breaking up the uniformity of the object operated upon. To thin out the stronger-growing branches, always leaving a leading twig when cutting, is the principle of this kind of pruning. I must here enter a protest against *clipping* spiral trees; the work must be done with the knife, never with the shears. I need not tell gentlemen who are well acquainted with the natural habits of trees, that there are now to be had every variety of tree that can be desired *naturally* of the spiral style of growth; this may not be known to amateur readers, who may be wasting labour forcing unnatural subjects, by dint of shears, into a style of growth that only makes them conspicuously ugly. We want more than form in the spiral tree; it is the most perfect growth of twig, combined with symmetrical form, that we seek in the culture of such trees.

In the grounds of a well-known residence in Ireland there is a nice specimen of Black Spruce Fir. Some years ago this tree became an object of interest to the owner for its distinct tapering symmetry; to multiply and enhance this effect the gentleman has had quantities of Common Spruce, from 20 to 30 feet high, clipped into *shape*; the shears have been applied just as done to a hedge—the reader can judge of the effect. I regret to state that this is being copied where there is a good opportunity of growing fine trees of natural elegance.

I can only name a few trees in each of the classes to which reference

is made ; but those named will be found to be of the most distinctive character, and invaluable in adorning the landscape, wherever properly cultivated, in this country.

Of the largest size of spiral trees the *Araucaria imbricata* stands king. There is a symmetry and striking effect about a fine specimen of this tree that requires a new style of words to express it properly. *Cunninghamia Sinensis* is another handsome tree of quite an exotic character, pyramidal in growth ; and it deserves special attention when it is found hardy. *Cryptomeria Japonica* and varieties are grand trees ; the variety *C. elegans* is a crowning beauty. These trees will not succeed or keep the elegant style of growth on exposed ground. *Abies Morinda* is a fine companion to the *Cryptomerias*—a most easily managed tree in pruning, and will lift with safety at a good size. *A. nigra* (Black Spruce) is a tree of rare beauty in ornamental planting. Its colour and style of growth are perfect of the dark-coloured trees. It is surprising how little this valuable tree is known in England or Ireland. We hear nurserymen complain that the Black Spruce is difficult to *get on* in a young state ; in fresh soil we find it flourish from the seed. *A. Menziesii* forms a beautiful glaucous pyramid tree, is very hardy, and will transplant safely at a large size. The Silver Fir is a dark pyramid tree of the greatest height, and presents a charming winter effect in parks—hardly inferior to *Picea nobilis* in effect. *P. pinsapo* and *P. Cephalonica* are remarkably fine trees for symmetrical effect, but are precarious to transplant when of large size. *Pinus cembra* is by far the best of its class for fastigate style of growth, and a valuable tree in landscape-planting. At Alton Towers this tree is seen to more advantage than anywhere else we ever saw it. *P. Lambertiana* is of the same character as *P. cembra* in style of growth—much loftier when full grown : in this country we prefer the *P. cembra*. The Larch is a most beautiful pillar tree when fairly treated, and what tree will stand such rough treatment as the Larch ? See it at Dunkeld—at Invercauld, near the house—or as it used to stand so majestically near Aboyne Castle—or by the Torc stream at Killarney, where it shows its peculiar silvery spray in winter,—and say if this is not a rare tree, in outline and contrast, for the landscape-painter. Another exquisite tree of this style is still more neglected—I mean the Deciduous Cypress. In spring and autumn this tree is very striking and ornamental ; and, from the smallest size to the large trees seen in many English parks, is equally effective. This tree should be planted by the hundred. I will only name the Deodar Cedar (in the class of large spiral trees) to complete my list of trees for full-size planting.

Of second-size trees there are great variety. *Cupressus sempervirens*

stricta must stand at the head of this class. This is a very remarkable tree in its appearance, in its history, and long life. In the Bridgetown Garden at Castle Martyr, near Cork, we saw a few years ago a specimen of this tree 60 feet high, and the whole tree presented a vigorous and perfect style of growth. The Cypress planted in 1340 on the grave of Hafiz is still a *living* monument of the renowned Eastern poet. The giant Cypress (over 120 feet high) at Somma, in Lombardy, said to have been planted before the Christian era, was living a few years ago, and is so still, I believe. It was not unworthy of the taste of the great Napoleon to diverge from the straight line in making his road over the Simplon, "to spare that tree." The warrior emperor, who spared no king of his own kind, gave marked homage to this king of the forest. The wood of the Cypress is most durable. The gates of Constantinople, made of Cypress, stood eleven hundred years.

In the Cupressuses, Thujas, and Biotas, we have the finest style and most varied class of trees to plant in dressed ground. What can surpass the elegance of *Cupressus funebris*, *C. torulosa*, *C. Knightiana*, *C. Lawsoniana*, and *C. Nutkaensis*?—all stately trees when full grown, and in a young state the most elegant of small spiral trees. *C. Goveniana* is a gem at this season of the year, when it is a sheet of bronzy gold; it is a fine spiral tree when so cultivated. I find this variety planted in some places as *C. Lambertiana*. This was sent to me recently from a private garden as the *true* *C. Lambertiana*! *Biota aurea elegantissima* is a most invaluable plant in garden decoration. The *B. Nepalensis* is a favourite tree for working up outsides, or where dense effect is required, and is a fast-growing tree. In some nurseries the *Nepal* and *orientalis* are so mixed up that it is sometimes difficult to get the true strict variety. *B. Tartarica* is a choice plant for a brown neutral colour.

I am delighted to see so much attention paid to the culture of Junipers in many gardens. Too much cannot be said in favour of Junipers for neat and neutral effect, especially where connected with stone buildings. The Juniper is a very beautiful genus of plants, and a tree of ancient history. It is the familiar tree in the deeply interesting story of Elijah the prophet: When the Baal prophets were so confounded and enraged by the "convincing fire," and when Jezebel threatened "So let the gods do to me, and more also," &c., Elijah "lay and slept under a Juniper-tree," safe from the wrath of Jezebel and "the gods;" but an angel "touched him." The Junipers are a free-rooting class of plants, most easily trained into bush or spiral form. *J. Chinensis* is a rapid-growing tree of great character. The Irish Juniper is a handsome, well-known variety. *J. ex-*

celsa (of Madden) is the most elegant of all the *Junipers*. *J. Phoenicea* I greatly admire. *J. thurifera* is a fine tree; and the Savin, for a dense, dark-coloured, small spiral tree, stands alone. The Red Cedar (*J. Virginiana*) gives great variety of form and tint in a small state, and is most easily cultivated.

Libocedrus is a beautiful class; but, unfortunately, they only succeed in select spots, except the variety named in trade-lists "*Thuja gigantea*," which should be classed with the *Libocedrus*. This variety is a pyramid tree of the very first rank, and thrives everywhere. *L. tetragona* is a very interesting plant. *Arthrotaxus selaginoides* is a valuable ornamental plant. The *Retinosporas* are a class of plants that promise the most beautiful style for the dressed garden. All of them that we have seen are interesting, but the *R. leptoclada* is a model of its kind. There is a little gem growing in the Royal Botanic Garden, Dublin, named *R. juniperoides*, which we never see without breaking the tenth commandment. *Prumnopitys elegans* is a new plant of fine habit, with heath-like leaves in a *young* state, and will prove an acquisition if hardy, which it appears to be. Of *Taxus* and *Dodocarpus* I need not write; they have characters so striking, and are so hardy that they are everywhere planted. The variegated plants of the Yew are most invaluable in the planting of any garden; and the Yew can be *forced* in culture by rich soil, and continue healthy, as no other tree that we have tried would do. Of Holly there are now over sixty varieties offered for sale in trade-lists. We think the Holly one of the most beautiful hardy plants under culture. In nursery-work the Holly is often of slow growth; yet in a wild state, as it is here in hundreds of acres, it grows up with great rapidity. The Holly is a purely *surface-rooting* plant naturally; deep planting is detrimental, and no doubt but this will be found often the cause of slow growth in young plants. If planted near the surface, and the surface rich soil, the Holly will not disappoint. The roots of the Holly run deep in *sand*, but this is exceptional to the soil the plant is generally cultivated in. *Mahonia fascicularis* is a fine plant, after the style of the Holly; it is a plant of beautiful growth, and will make a striking pyramid of 10 or 12 feet high. *Berberis Darwinii* and *B. Jamiesonii* are fine things to cultivate as dress specimens. There is a small-leaved *Pittosporum* at Castle Martyr (I believe it is *Mayii*, or nearly related to it) which merits attention as a spiral plant of peculiarly neat habit; our plants of it are small, but I learn from Earl Shannon that he has it 10 feet high. It is well known that Earl Shannon has one of the finest collections of trees and shrubs, and is considered the best authority on such matters; and I cannot do better than quote what his lordship says in a note received a short time ago:

"I hope the New Zealand Pittosporum does well with you. I now look on it as one of the prettiest shrubs ; the pyramid of sea-green has a fine effect among the dark evergreens." I should be glad to know if this pretty Pittosporum has been tried out in Scotland.

I have only briefly touched this subject of spiral trees, the future growth of which may be predicted with certainty. Classical associations are identified with such trees, and when seen to advantage they will claim attention from the scholar and man of taste.

CHAS. M'DONALD.



THE FLOWER-GARDEN.

No. XVI.

BULBOUS-ROOTED SPRING FLOWERS.

Anemone.—The Anemone ranks among the most various and brilliant-coloured flowers that are available for spring decoration. The hybrids and varieties of *A. coronaria* are numerous and beautiful, but the self-coloured are most effective in masses and lines, while all are very gay mixed-border flowers. A sandy loam, deeply worked and manured with well-decayed cow-manure, suits them best. For flowering early, they should be planted in October ; for late spring and early summer flowering, planting should be deferred till February and March. When the roots have to be purchased, they are generally very much dried—a condition which is not favourable to their well-doing after being planted. Indeed, if planted at once in damp cold ground, the chances are that a good many will perish. In order to prevent this risk as much as possible, it is well to lay the roots for a time in damp sand before planting-time. When planted, they should be covered $2\frac{1}{2}$ inches with soil, which, if the ground be heavy, should be composed of equal parts leaf-mould and loam and road-grit. To have well-filled-up beds, they require to be put in the ground not thinner than 6 inches by 4 inches. Anemones are very easily raised from seed sown immediately it is ripe in light rich soil, covering the seed about half an inch, and shading the beds till the seed germinates.

Bulbocodium Vernum.—A pretty Crocus-looking plant, and requiring similar treatment to the Crocus. It does best when left undisturbed for several years. It is very suitable for planting close to the margins of beds and borders, where the summer plants can be planted without disturbing it.

Crocus.—The different varieties of the Crocus are very effective for spring gardening, and, being easy to cultivate, are everybody's plants.

They are, from their neat and compact habit, very useful edging and line plants, and can, like the *Bulbocodium*, be planted so close to the margins as not to require being removed to give room to the summer flowers. When the bulbs have to be purchased, it is desirable to plant early, say October, especially in damp soils. They thrive in almost any common garden soil, though a sandy loam suits them best. In making fresh plantations, the ground should be deeply worked and manured with either well-decayed manure or leaf-mould. In heavy soils it is desirable to put some light soil both under and over the bulbs when planted. In planting groups in mixed borders, from six to eight bulbs should be put in each group. Mice are exceedingly fond of them, and these enemies must be sharply looked after, or a few of them will soon destroy a great many bulbs. They flower best when left undisturbed for a number of years.

Erythronium Dens-canis (Dog-tooth Violet).—The varieties of this pretty little plant are very interesting, and their nicely-marked leaves render them useful and effective edging plants even after they are done flowering. They thrive best in a rather peaty soil, but any light sandy soil, well enriched with leaf-manure, will grow them very well. The best time to plant them is October or early in November. Planted about 2 inches apart, they make neat edgings the first season, and, like the *Crocus*, can be planted close to the margins and allowed to remain undisturbed for years.

Fritillarias.—These are in most cases more stately and curious than really beautiful or showy. They are, however, useful for back lines in spring gardening. They are all very hardy and easily grown, and multiply freely if left undisturbed in the ground. When purchased, plant in November, and surround each bulb with a handful of sand, and cover the bulbs from 4 to 6 inches, according to their size.

Galanthus Nivalis (Snowdrop).—It is not necessary to say much about the culture of this favourite. They can be planted almost any time—even when in full bloom, if balls of soil are lifted attached to each patch. They thrive in almost any soil or position, and when done blooming they bear removal with impunity to make way for something else. For planting on grassy banks and lawns they are very effective. It is only necessary to make holes with a dibble and drop in the bulbs 3 inches deep, and cover with light soil.

Hyacinths.—Among the most beautiful and sweet of spring-flowering bulbs; and the cheap rate at which common varieties can now be purchased, places them within the reach of most owners of gardens. The soil best suited for their growth is a deep, light, well-enriched loam; but any ordinary garden soil that is not wet and clayey, and that is deep worked and rich, will grow *Hyacinths* very well. At the same time,

to bring them to the greatest perfection, a quantity of mellow loam and some well-decayed cow-dung is necessary. The ground should be trenched at least 18 inches deep, mixing in the manure thoroughly with the whole body of the soil. The bed should be well raised above the surrounding surface, to keep it dry in winter and spring. November is a very good time to plant. The soil should not have a foot set on it after it is trenched, and in planting the bulbs boards should be used to stand on. To make an effective bed of Hyacinths, they should not be planted wider apart than 9 inches. Cover the crowns of the bulbs about 3 inches; and when the soil is inclined to be heavy and wet, a little sand should be put round each bulb when put in its place. The surface of the bed will require to be covered with a slight covering of loose litter to keep frost out, which covering should be removed when they appear above ground.

Muscari.—There are many varieties of this well-known plant, the Grape Hyacinth. They are not well adapted for beds, but are very interesting mixed-border plants. They thrive best when left unmoved for several years, and are exceedingly easy to grow, thriving well in almost any garden soil.

Narcissus.—The garden varieties of these are both pretty and fragrant, and are well worthy of extensive cultivation where sweet spring flowers are desired. They thrive well with general treatment similar to that recommended for Hyacinths when the bulbs are bought in; but in mixed borders, if left undisturbed, they do remarkably well and increase rapidly. The Polyanthus *Narcissus* are very showy border plants.

Scillas are among the most lovely of early spring flowers. A light dry soil suits them best; and the dwarf varieties can be planted for margins, and allowed to remain as recommended for Crocus, &c. When bought, they should be planted in October, about 3 inches deep, and covered with some light sandy soil if the natural soil be stiff.

Triteleja Uniflora.—This pretty plant succeeds with the same management as the Tulip. It is a very desirable plant to grow, as its flowers, being of great substance, remain in bloom a long time.

Tulips.—These lovely spring bulbs require treatment very similar to that recommended for Hyacinths. Soil that is naturally retentive and wet should be ameliorated by additions of leaf-mould and road-scrapings, mixing in these ingredients with the staple, as they thrive best in an open soil from which water passes freely away. The planting should be performed about the end of October, and a handful of fresh sandy soil placed about each bulb will be beneficial. For beds they should not be more than 6 inches apart each way, and the smaller varieties may be planted at 4 inches. The crowns of the bulbs to be covered 3 inches deep when the soil is levelled.

D. THOMSON.

NOTES ON GREENHOUSE PLANTS.

(Continued from page 104.)

ACHIMENES.

PROPERLY speaking, we should follow the given rule, and designate this really lovely genus "Stove plants." So are countless others designated that are in a great degree constituted to claim alliance with, and occupy a distinguished place among, greenhouse plants. We acknowledge the danger of disregarding the essential distinction that separates stove from greenhouse plants; nevertheless, abundant and indisputable evidence exists that, where prudent foresight and judicious management are brought into action, sundry so-called stove plants vie with, and become the allies of, the regularly established occupants of the conservatory. By this theory we do not infer, nor do we desire, any gross innovation, to the exclusion of old worthies, or to add to the already over-swelled catalogue of neglected plants; our desire is rather in some measure to extend the base on which we operate, by adding plants whose characters for beauty and usefulness cannot be questioned; being persuaded that extension of variety alone is sufficient to renew a taste for variety, and to suppress that (shall I call it?) infectious mania that is predominant among all ranks of gardeners, to over-multiply a few select families to the expulsion of the many. However, it is gratifying to witness counteracting influences at work in the right direction. The attention of a few of those men whose words, though spoken in whispers, gather strength with distance, is earnestly engaged in combating the enemy, both by just censure of pen, and by example in the extensive adoption for embellishment of those plants so improperly kept out in the cold. But to return to our subject: it is principally to the amateur and gardener whose command of glass is restricted to a vinery and greenhouse, or suchlike, that the Achimenes ought to prove an inestimable boon, taking into account the limited space required to keep their roots over winter, and the great addition a few varieties are to a greenhouse, from their exquisitely beautiful and very dissimilar flowers as compared with the generality of other plants for that purpose.

Soil and Potting.—A compost of a light rich character, composed of the following ingredients: Turfy peat, silver sand, and light maiden loam in equal portions, along with a sixth part sheep-manure, well decomposed and in dry condition, the whole properly incorporated and passed through a $\frac{1}{4}$ -inch sieve, is what best suits this genus. Good drainage is of importance, whether the ordinary pots or the special Achimenes-pots are used, which should range in sizes from 7 to 10

inches in diameter. The pots to be filled after this method : Over the crocks put a stratum of the coarser parts of the mould, then fill with the compost up to the top, and skim the surface with the hand, pressing the body of soil down level about an inch below the rim of the pot ; on this bed arrange the tubers so that they lie 2 inches apart every way ; cover the tubers with rather more than half an inch of soil, and again press and smooth the surface. Supply each pot with a fresh tally, which ought never to be handled in case of disturbing the tubers ; then moisten the soil beyond the bed of the tubers with tepid water, and consign the whole to a shelf near the glass in the vinery, where a continued exposure to the full sunshine is at command throughout their growing season. These instructions and precautions looked to, steady attention to keeping the soil moist will soon bring the growths above ground.

We have restricted our plans of procedure to what can be carried out with the aid of a vinery shelf, preparatory to flowering the plants in a greenhouse. Other methods could be enumerated, but they would properly apply to stove-culture, which is at present out of our province. Pits, with a good command of heat, would suit the purpose of growing these plants as well as a vinery, but might be found defective in ripening the tubers after flowering, which can be nicely done in a vinery.

General Culture.—*Achimenes* require no shifting of pots. What is next for consideration comprehends the main items of success—viz., a proper combination of four elements—heat, moisture, light, and air. As regards heat, that will be abundantly and constantly provided, if their position be the shelf on the back wall of the vinery, provided they are not placed in the current of the ventilators ; cold draughts have a ruinous effect on the hardiest plants, and more especially on those of Asiatic blood. Let them rather enjoy the reflection of the sun's rays thrown off the back wall, out of the direct influence of the ventilators. Attend to keeping the soil moist, but not saturated, with water warmed to the heat of the house, performing the watering with a pan provided with a rose, that the surface of the soil may not be disturbed. The young plants under this treatment will prosper, making more rapid growth as they dip deeper into the soil. Sprinklings of pure water overhead, after days of strong sunshine, should never be neglected ; and when the plants have attained to a height of 4 inches will be the most suitable period to provide each leader with a smart, well-dressed, and pointed stake. We have found the following plan of staking make a very smart and natural-looking plant : Insert the outer circle of stakes at an angle sufficient to cause the stakes to stand well over the rims of the pots, and fill in the centre in an irregular way—viz., keeping the stakes at an equal distance from

each other, but not in lines; and while in the act of tying, appropriating the strongest growth to the tallest stakes in the centre of the plant, making the tops of the stakes slope from the centre to the edge all round. Finally, in this division attend to tying as the shoots progress, turning the pots once a-week, supplying regular waterings above and below, keeping in mind that a little weak guano-water twice a-week will be beneficial. As they advance in growth, and add strength to length, a repetition of the foregoing routine is all that is required until the first blooms expand, when the plants are in a condition to be received into the conservatory, where a warm and dry stance should be afforded them.

Their subsequent requirements are comprised in turning the pots now and then, supplying water at the roots, but avoiding sprinkling or wetting the foliage, as chilly damp is the worst enemy they have to contend with while in the greenhouse. And as the plants advance towards maturity, special care should be taken to withhold water, so that their bulbs are pretty dry by the time they get shabby in appearance. Besides, at this stage the *Achimenes* has a tendency to be affected with mildew, which often proves exceedingly detrimental to the proper ripening of the tubers, which depends on the stems performing their proper functions. To form large well-matured tubers, and to prevent any risk arising from mildew, a dusting of sulphur ought to be applied over the affected parts on its first showing its presence, to prevent it spreading farther among the stock. This will tend to insure an abundant supply of tubers for the following year. Return the plants to the vinery when flowering is over, that they may undergo a gradual drying process until the stems are withered, when the stakes may be removed, the stems cut back, and the pots packed one above the other, in a dry warm corner out of the way.

Propagation.—This can be accomplished by cuttings taken off the young shoots in spring in the ordinary way, as well as from tubers. As regards the separation of the tubers in spring, some care must be exercised. They are so brittle some of them will scarcely bear handling. A good plan is to turn the balls on end into a fine sieve, removing the crocks, and working cautiously with the fingers until the whole is reduced to such a consistency that a little working of the sieve will separate the soil from the roots, when the tubers can be gathered out; and while thus engaged, a portion of the finest should be put aside for immediate planting, reserving the remainder to come in as a succession. All being overhauled, the reserved stock can be packed in silver sand, allotting one pot for each variety, until required for starting into active life.

Now, a few words more and I have done. Some of our readers

will consider that these Notes are a month behind time, since tubers undergoing a similar winter treatment will have advanced their stems above ground. Still I venture to advise a trial of the method I have suggested, with the assurance that good results may yet be obtained. All the difference at present is, potting plants instead of roots.

We subjoin the following dozen sorts that will be found suitable for the purpose proposed: Ambrose Verschaffeltii, Aurora, Carl Walfort, Carminata splendens, Dr Hopf, Edmond Rossier, Hendersoni, Longiflora major, L. alba, Mauve Queen, Margarettia, and Rosea magnifica.

A. KERR.

(To be continued.)



GOOD PEARS.

THE Pear is perhaps the most useful fruit the gardener grows—is universally appreciated, and attainable by great and small nine months in the year.

It is as easy to grow a good Pear as a bad one; the difficulty is knowing what are really good. I am aware that the amateur has many difficulties to contend with: he takes up a catalogue of many hundred varieties, and as he only wants six, twelve, or twenty-four, is at a loss what to select among the glowing descriptions given. He makes a selection, and plants; in the course of time he gathers fruit, and is disappointed. It is very difficult to name Pears that would do in all situations; it may be done, but in such a list many of the best must be omitted, as what will do in one situation will not succeed in another. At the same time, if good Pears are really required, cheap glass and other appliances enable them to be obtained in any situation, even the most ungenial. Having had charge of one of the largest collections of Pears in England, where vast quantities of new Pears were annually added and proved, I have had a good opportunity of proving what are really worth growing. It frequently occurs that the new are no better than the old. It requires several years to determine the merits of a new Pear, as great changes frequently take place in their character. For instance, Prince Albert, when first introduced, was good, a great bearer, and vigorous; it has deteriorated to a fourth-rate or stewing Pear—in fact, we have discarded it. Others, on the contrary, improve, so that a hasty decision is not advisable. This has been a remarkable season—in fact, Pears are all out of joint. At this time (December 20) late Pears, as Winter Nelis, are over; Ne plus Meuris, whose season is March and April, are quite ripe; and Beurré

Rance, which should keep till May, are nearly ready. Pears this season are smaller than usual; at the same time, their colour is above an average, and flavour generally excellent.

There are a number of new Pears very little known, many of them of great excellence. Much has been said about the English seedlings of Huyshe—viz., Prince Consort, Princess of Wales, Prince of Wales, and Victoria. As far as my experience goes, Marie Louise, one of their parents, is worth the royal batch. They are shy bearers, but having had good godfathers, have been pushed on in the world: there are hundreds better.

I will name thirty of the best Pears I am acquainted with—I give them according to my own taste; I will also name the best for show or display on the table, and the best for market, as the best market Pears are generally not the best for a gentleman's table.

HIGHEST FLAVOURED PEARS.

- | | |
|------------------------------------|--------------------------------|
| 1. Winter Nelis, or Nelis d'Hiver. | 4. Beurré Superfin (Goubault). |
| 2. Passe Crassane (Boisbunt). | 5. Josephine de Malines. |
| 3. Durandeau, or De Tongres. | 6. Gansal's Bergamot. |

1. A well-known January fruit of unequalled excellence.

2. Quite a new Pear of great excellence; melting rich; medium size. Perhaps the finest late Pear known. In use from January to March. This must not be confounded with Surpasse Crassane.

3. A remarkable Pear; large and very handsome; on the sun side crimson, on the shaded yellow, with russet dots, the whole showing as if varnished. Flesh very melting, juicy, sweet, rich, and delicious. The handsomest Pear I know, rivalling Beurré Clairgeau in beauty. Very prolific. October and November.

4. Fruit above medium, of a fine lemon colour; with russet flesh, melting rich, with a fine aroma. Very hardy and prolific. September.

5. A splendid late Pear; not large; flesh very tender, richly flavoured, with a strong aroma. March to May.

6. This is well known. Long in coming into bearing, and occasionally gritty on limestone soils. I have always had the best fruit from grafts inserted on old trees. Its peculiar rich flavour entitles it to a little extra indulgence. October and November.

COLLECTION OF TWELVE PEARS.

- | | |
|-----------------------------|----------------------------|
| 1. Beurré d'Amalis. | 7. Duchesse d'Angoulême. |
| 2. Beurré de Caen. | 8. Gansal's Sickle. |
| 3. Bon Chretien (Williams). | 9. Louise Bonne of Jersey. |
| 4. Conseiller de la Cour. | 10. Marie Louise. |
| 5. Prince Napoleon. | 11. Monarch (Knight's). |
| 6. Duc de Morny. | 12. Madame Millet. |

1. Too well known to require notice.

2. A hardy variety of the old Brown Beurré; a more certain bearer. October.

3. A good old early Pear; should be gathered before ripe. Sept.

4. A noble Pear; one of Van Mons's best. Large, rich, and melting. November.

5 and 6. Two new Pears of recent introduction; large, very rich, and melting. They promise well. February to April.

7. An old variety; large; very uneven in form. When grown on an east wall, very good and rich. Succeeds better on a pyramid. November.

8. Larger than the Sickle, and equal to it in flavour; very highly perfumed. October.

9. The most delicious Pear of the season; a great bearer; compact habit—in fact, where six trees are planted, this should be one. October.

10. Too well known to require comment. October and November.

11. An old Pear which has kept its ground against all recent introductions, French or English. One of the most useful Pears I know, as it lasts from December to February.

12. Very large and excellent. Requires a warm situation. March to April.

TWELVE OTHER PEARS WORTHY OF CULTIVATION.

1. Beurré Bosc.

2. Beurré Rance.

3. Beurré Diel.

4. Beurré Easter.

5. Dana's Honey.

6. Doyenne d'Été.

7. Jargonelle.

8. General Todleben.

9. Marie Louise Nouvelle.

10. Ne plus Meuris.

11. Passe Colmar.

12. Van Mons's Leon le Clerc.

1. A large Pear; very rich, aromatic, and excellent. Requires a wall. October and November.

2. A medium-sized Pear. When well up, buttery, melting, rich, and vinous; this is not always the case. One of the latest Pears we have. April and May.

3. An excellent Pear; a great bearer; succeeds as a standard; fruit large, rich, and melting. October and November.

4. An excellent Pear, and great bearer; large, melting, and perfumed. Often mealy from a wall. January to April.

5. An excellent little Pear of American origin; highly perfumed and melting. Not so much known as it deserves. December.

6. A very handsome early Pear; rich and sugary. This is the earliest Pear fit to send to table. July.

7. Too well known to require description.

8. A monstrous new Belgian Pear; rich, melting, and juicy, sometimes slightly gritty. January.

9. A large, rich, early form of Marie Louise. Ripe in September.
10. One of the most valuable Pears grown; large, rich, and melting. Requires a wall in cool situations. February to April.
11. A medium-sized prolific Pear; very juicy, vinous, and aromatic. Best from a wall. December to January.
12. An exceedingly large Pear; rich, juicy, and delicious. Requires a wall in most situations. Well worthy of attention. November to December.

The above-named Pears are sufficient for any garden, however large, and include the best Pears in cultivation.

It may be objected that earlier Pears—as *Amiré Joannet*, *Citron des Carmes*, &c.—are not mentioned. I omit them as not presentable at a gentleman's table; and *Doyenne d'Été*, a July Pear, is the earliest I can recommend. At the same time, there are a few old Pears, a few trees of which it is always an advantage to have about a place—as the highly-perfumed melting *Sickle*, *Suffolk Thorn*, a small edition of *Gansal's Bergamot*, *Autumn Bergamot*, *Brown Beurré*, and the *Old Swan's Egg*, with its rich musky aroma, very difficult to surpass.

Some people delight in having monstrous fruit on their table, the eye being of more consequence than the palate. In that case, *Beurré Clairgeau* takes the lead, with its smooth yellow skin deeply tinged with red next the sun. *Beurré de Thuerlink*, *Vicar of Winkfield*, and *Leon le Clerc à Laval* belong to this class.

Pears for market purposes require to be very prolific, and please the eye—size being of importance. I do not think any can surpass *Beurré Clairgeau*, *Durandau*, *Colmar d'Aremberg*, and *Louise Bonne of Jersey*.

In conclusion, there are a few new Pears worthy of a trial, which I cannot decisively speak to—as *Duchesse d'Hiver*, *Monseigneur Sibour*, *Barbe Nelis*, and *Le Brun*.

THOMAS SHORTT.

January 1868.



NOTES BY THE EDITOR.

(Continued from page 124.)

HARLAXTON, the seat of John Sherwine Gregory, Esq., is one of the most magnificent mansions in England, both in regard to its size and the elaborate and splendid style of its architecture. It was built by Gregory Williams Gregory, Esq., who died in 1854, just as he had finished it, and furnished it with all that could be collected of what was most rare and costly in the shape of furniture and works of art.

After his death it passed into the possession of a brother, who threw it open to the public; and such was the rush from all parts of the country to see it, that a large hotel had to be built close by to afford the visitors temporary accommodation. It was during this period that her Majesty the Queen paid it a visit; and it was surmised that it was to be purchased for the Prince of Wales. On the death of its then owner—who most injudiciously left the furniture and works of art to one, and the estate and mansion to another—it was shut up, and the hotel stands deserted. Litigation was had recourse to in order to determine what was furniture and what was not. This has now been settled, and all the gorgeous furniture and splendid tapestries, as well as statuary, removed. We saw it in its glory, and we saw it after it had been sacked, for its treatment deserves no other name. The present owner is, however, redecorating the rooms where the tapestries have been taken down, and refurnishing them in a very elegant modern style,—lacking, however, the interest which it had before, where every piece of furniture was worthy of particular study.

There are features of special interest in the gardens at Harlaxton, where, adjoining the mansion at various points, are five conservatories, built of stone, marble, iron, and glass, most elaborately decorated, and furnished with marble fountains and basins. Some are stove conservatories, others greenhouses, and well furnished with plants. To the south and west fronts are elaborately terraced and decorated flower-gardens, where enormous sums have been spent on masonry and sculpture in laying them out. Here we saw last August splendid masses and borders of all the principal bedding-plants in great beauty, doing Mr Vinden, Mr Gregory's most intelligent gardener, great credit by the taste displayed in their arrangement as well as cultivation.

The kitchen-garden and forcing-houses are about half a mile from the mansion, on rather low ground. The garden walls alone cost £10,000; they are 20 feet high, built of brick, with elaborate stone dressings and copings, having niches at regular distances intended for statuary—the whole so utterly unlike anything else we ever saw before, that an intelligible description of it is impossible. Only a small part of the glass that was intended has been erected, and it is principally devoted to Peach and Grape culture. The Vines and borders stand in need of renewal. Here we saw the finest Cherry-trees (Morello and May Duke) we ever beheld. Many of the Pear-trees are also very fine. The management of the place, considering the staff of men kept, does Mr Vinden much credit.

From Harlaxton we passed on to Belvoir Castle, the seat of his Grace the Duke of Rutland, which is a noble castle in the Norman-Gothic style of architecture, originally built by a Saxon family of the

name of Stanton, who were forced to give it up to Robert de Todeni, standard-bearer to William the Conqueror, who added largely to the building. There is, however, a tower still standing called the Stanton Tower; and the family of Stanton, still in the county, retain the right of presenting the keys of the castle to the sovereign when he or she may visit it. It is most commandingly placed on the eastern terminus of a high ridge of oolite limestone known as the Backbone of Lincolnshire, with the rich vale of Belvoir stretching away to the horizon on the south, east, and north sides, and the finely wooded ridge of the hill on which it stands stretching away to the west, the towns of Lincoln, Woolsthorpe, and Barkston visible in the distance. On the fine evening in August when we stood on the battlements of this grand old feudal castle, with the setting sun casting alternate light and shade on all around and below, it was a scene worth going a long way to behold. The whole grounds round the castle are densely wooded, except in immediate contact with the battlements, where Mr Ingram has for years made grand displays of spring flowers. In fact, we believe we are warranted in saying that it was here spring-flower gardening was revived on anything like a grand scale, by Mr Ingram. It never has been our good fortune to visit Belvoir in the spring; but, from the number and variety of spring-flowering plants we saw in preparation in the kitchen-garden, we can form some conception of the blaze of bloom they and the numbers of bulbs used for this purpose will produce, and which must look gorgeous from the castle terraces.

Descending to the large kitchen-garden in the vale beneath the castle, we saw in the vineries, as we have seen before, very fine crops of Grapes, especially Muscats, which were well finished and coloured; but, as we have already stated in these papers, we only mean to refer to matters of special interest: one instance of this sort, we consider, was a long span-pit full of greenhouse plants, including Azaleas, Epacris, and suchlike, and which had all the glass shaded green by being washed inside with what painters call green distemper powder mixed with butter-milk, except two sashes. The plants, when placed in this pit some months before to make their summer growths, were all in the same general state as to health and vigour. They got the same treatment as to water, ventilation, &c., the only difference being that those in the two lights referred to were under the clear glass, the others under that which was shaded green; and had we not seen the plants with our own eyes, we could not have believed that there could have been such a difference in their health, growth, and general appearance, and all in favour of those under the green glass. Nor was this growth at the expense of maturity, for we examined the Azaleas minutely, and found them well set, with fine hard flower-

buds. The shade of green was but a light one, yet such was its effect in this case; and we beg to call the attention of physiologists to the fact, and we hope Mr Ingram may be induced to give us his view of the subject, in which there may be something of great importance to horticulture. If such a shade is found to be permanently beneficial to vegetation, glass of the colour could easily be made. If beneficial in summer only, then Mr Ingram's colouring can be made available for the summer, and be washed off in autumn.

If there was one thing we envied Mr Ingram for more than another, it was his splendid crops of Pears on the extensive walls that surround and intersect the large kitchen-garden. The strong sound calcareous loam of the vale where the garden stands seems designed as the home of the Pear. This, added to a judicious system of management, has long rendered these gardens famous for their crops of Pears; and this was the more striking in our eyes last year, from the fact that the miserably cold wet season we had in Scotland rendered such Pears as were on the trees mere abortions. Amongst the sorts which Mr Ingram told us never failed to bear heavy crops were Bergamotte d'Esperen, Beurré Rance, Passe Colmar, Crassane, Peach Pear (an excellent but little-known Pear, ripe in August) Van Mons's Leon le Clerc, Soldat Esperen, Beurré Clairgeau, and Beurré d'Amalis. These and many others were loaded with fine full-sized fruit; and we hope that Mr Ingram, who is well known as a talented geologist, will give us his opinion as to what ingredients in the soil of Belvoir are so favourable to the growth of Pears.

W. T.

NOTES ON HARDY HERBACEOUS PLANTS.

(Continued from page 32.)

PHLOX.

ONE or two of the later-flowering species of Phlox have proved very pliant in the hands of the florist, as the splendid autumn-flowering varieties now so numerous and justly popular abundantly testify. It is not, however, with these that my Notes at present have to do, but with the less-assuming spring procumbent species. First among these to appear is *P. nivalis*, a pretty little thing, not passing 4 or 5 inches in height, which clothes itself in April with pure white flowers. It is a charming little rock-plant, and in many places in the north it does well in the open border in ordinary garden soil. Coming simultaneously with the purple Aubrietias, it may be used in combination with them to produce good effects in spring flower-gardening. This is

rather a rare species, its usefulness being not appreciated at present as it deserves to be. *P. subulata* is another of the cream of these dwarf early-flowering Phloxes, and, like the last species, is not cultivated in private gardens to the extent it merits. It appears a month later in the season than *P. nivalis*, and has purple flowers. *P. setacea* comes near the last sort in appearance, but has purplish flowers, which it yields about the same time as *P. nivalis*, or in April. *P. Nelsoni* has light purple flowers and a close trailing mode of growth, and blooms in May. *P. frondosa* is more compact than either of the foregoing kinds in its habit of growth. I can only speak on hearsay grounds of its merits, as I never had the good fortune to see it in its flowering season, which is May; but it is said to be quite equal to any of the other sorts noted above. *P. reptans*, which has the misfortune to appear under two or three aliases, is perhaps the most beautiful of them all. In some places in the north, some ten or fifteen years ago, this species was an immense favourite. It is a pity the same cannot be said of it now. It is still to be seen in a few places, left very much to itself, but is rarely cultivated as its beauty and usefulness entitle it to be. It is best known in Scotland under the name *P. verna*, and is sometimes also named *P. stolonifera*; but *P. reptans* appears to be the oldest name, and is given on excellent authority; it is also more correctly descriptive of the mode of growth of the plant than *P. stolonifera*, and as it does not generally flower except in the south of the kingdom before the end of May or beginning of June, it has little title to the name *verna*. It is, however, of little consequence which name it bears; but it is unfortunate and embarrassing that it should be circulated under so many aliases. These are plants that are in no respect very difficult to keep. They are best adapted, on account of their close creeping mode of growth, for covering rockwork; but most of them succeed quite well in the open border. They require but little space to grow in, which should commend them to the notice of amateurs strongly—quite as strongly as the autumn-flowering kinds should do; for these may be had and enjoyed while as yet the probable glories of the late-flowering kinds are being only dreamed of.

W. S.

BOILERS.

It is just twenty years since we first started stoking; in this long interval we have been up and down and zigzagged about the country in pursuit of information and a living, like the daily records of a barometer traced on a sheet of paper, always doing a little with the coal-

shovel, and making the acquaintance of furnaces and boilers of varied pretensions, and many of the much-abused flues of different degrees of construction and effect, which, as a system, are justly superseded by, but still we think might oftener be made to supplement, the hot-water pipes. About stoking in general, we never yet knew a fire or furnace which had not its own peculiarities, and which did not take some considerable experience to understand and manage well. No two spades are alike to dig with, no two barrows to wheel—nay, even two cricket-bats are not alike we are told, neither are two fires alike to manage; and most gardeners will have observed that one man will manage a fire with the most steady and satisfactory result, while another will bungle it, and, like all bad workmen, quarrel with the tools. When so much nicety can be exercised in the rough work of even stoking a fire, the shape, construction, and setting the boiler itself must be a matter of much nicer consideration.

Among the first boilers we ever fired was one, a huge cylinder of cast iron about $4\frac{1}{2}$ feet by 3, which stood isolated on the floor of the stoke-hole like an inverted ale-glass. The coals were fed through a hole in the top, on one side, for which there was a very heavy iron lid; the fire was thus in the centre, and the water was contained in a thin cavity between the outer and inner skin of the cylinder. Air was admitted by a screw acting on the door of the ashpit or valve at bottom. One of those boilers we have several times kept alight for fourteen days without ever touching it; the fire would cheer up in a few minutes by giving the screw a few turns. Boilers are still made with the merits of slow combustion ascribed to them; but we have never again seen or heard of the same as those mentioned above. Their great defect is the waste of heat from the outer surface. Another sort of boiler we stoked for some considerable time, and which had a large amount of work to do, was scarcely a boiler at all, unless a tubular; it was simply a circular coil of 4-inch pipe set in a circular well or furnace, like the worm in the cold-water barrel of an illicit still, which, however, not many of our readers have seen. Coke and Welsh coal were used; the draught did not escape at top, but low down at the side; with a clear fire, the heat was fierce and steady in the space above. The arrangement answered well. Attached to this boiler, for heating a coach-house, was a series of upright pipes of the usual length, connected by siphons top and bottom; and the water ascended and descended—we should say, circulated perfectly—by taking care to allow the air to escape at the top of each coupling; there was, however, a considerable fall to the boiler. We have fired the old conical corrugated boiler from the size of a coffee-pot to that of a butcher's block. Here is still one *in situ* to this day, a *fossil*, but never fired. We never

could appreciate these boilers—they are sooty fellows. Of tubulars their name is,—well, not exactly legion; but they keep developing in shape until, by a process of natural selection, the one which approaches or resolves itself into a genuine horizontal will be the longest lived. We never had the pleasure of stoking any of them but Weeks's, which is the parent of them all. Horizontal or vertical, their power is great with coke; but to our mind the principle is wrong. An immense amount of heat escapes up the chimney which ought to be caught and utilised, for a boiler is simply a contrivance for licking up the heat generated by combustion, and, through the medium of the water, distributing it where wanted; and as the tendency of a draught of heated air is upwards, the greatest amount of surface it can be made to traverse until it is reduced to the temperature of the said surface the better. Of course a certain amount of heat must, under any circumstance, be lost, increasing with the heat of the boiler; therefore we consider, and experience proves, that the best sort of boiler is the horizontal, or some modification of the saddle. Ormson's new boiler, but for its complication and expense, is a great step in advance. We are acquainted with its working, and must say it is very powerful and economical. Meiklejohn's cruciform, three of which we have in constant use, is the best with which we are acquainted, all points considered. But we are of opinion that a still more improved boiler is yet to be made, to combine the power of the tubular with the economy of the horizontal—that is to say, a boiler which will exhaust the heat from the fuel, and that shall be simple and cheap; it must be of cast iron. Two large wrought-iron boilers of the saddle variety are in use here, of a peculiar construction, which are very efficient. The lower part spans the fire in the usual way; but where the draught usually passes along the side flues over the flanks of the boiler, a side saddle is made to project over on both sides, like the wings of a bird, so that the flame plays along their under surface: it is just like three saddles in one. This suggests the thought of the comparative durability of wrought and cast iron; the palm must be given to the latter. Here are three cast-iron boilers which have been fixed thirty years, and seem as good as ever; while two wrought-iron ones, shelled off to the thickness of a sixpence, have been renewed twice in the same period. Thomson's retorts are right in principle, and the single retort is peculiarly the amateur's boiler; it is very efficient and easily set. We have two in position here—one for heating a large pine-pit, the other a chapel.

Is the one-boiler system maintaining its ground or not? Is it the best which can be adopted in a gentleman's garden where forcing is carried on extensively? We doubt its being the best in all its integrity. Series of houses should be heated together; for instance,

stores for Pines and plants together, vineries together, and cool houses together.

We lately had the pleasure of examining a striking instance of the carrying out the old or many-boiler system in the greatest iron district of Yorkshire, where a system of forcing and plant houses are in course of erection which will rival Manly Hall, Manchester, forming three sides of a square kitchen-garden, and which include a large palm-house and an orchard-house, heated, at least 250 feet by 20, like an immense shooting-gallery. But to our boilers: although each house has not exactly a boiler to itself, still the number is considerable, and the whole are arranged in one immense stoke-hole. When we saw the boilers, wrought-iron saddles, all of a size, they were in position, and the pipes all attached but not built over. Our first view of them was from an elevation, and they reminded us of a row of fat oxen tied in their stalls; we are safe in saying there were ten in the row. Now, we will allow our readers to picture our amazement at the confusion and profusion of flow and return pipes, some of them having to do their duty a long way off; and fancy the heat in this same stoke-hole when the whole are in operation—it would rival the engine-room of the Great Eastern. One part where we stood seemed paved with hot-water pipes, a veritable *chemin de fer*. This is at the foot of the Cleveland Hills, whose foundations are laid of ironstone; and when we mention the name of Bolckow, the association with the word iron is complete. Stephenson is said to have called coals bottled sunbeams; latterly, Professor Tyndall would call them bottled energy, force, or motion. Heat is said to be the embodiment of action, and even life; a reflection of this nature crossed our thoughts on viewing this establishment. This is to be a grand laboratory to convert the life, action, or energy of the coals into vegetable life again, in the shape of Pines, Peaches, Melons, &c., on something like mechanical principles.

THE SQUIRE'S GARDENER.



PAULONIA IMPERIALIS.

THIS stately tree resembles the *Catalpa syriaca*, and is a great acquisition. In many parts of the country it may be seen as a good-sized tree; but in some cases the *Paulonia* does not succeed. We lost a good-sized plant a few years ago, and the cause was found to be wet subsoil. On visiting a neighbour the other day, I found my friend in trouble about the state of a good-sized *Paulonia*. The surface of the ground did not indicate wet; however, a hole was dug near the

tree, and the subsoil was wet: the tree was at once lifted, and the cause was clear.

I send you this warning note, thinking that it may be useful to some one who may have planted the Paulonia without considering drainage essential. This tree will stand rich feeding on dry ground.

M.



HINTS FOR AMATEURS.—APRIL.

GARDENS generally will now have an orderly and spring-like appearance. All borders and plots of ground should at this season be lined off to their proper width, measuring from the edgings of the walks, and forming the borders, which may be for fruit-trees, which, when dwarf and neatly kept, are the most useful ornaments in gardens of any description. There should be narrow paths between the borders and brakes, so that the latter can be entered to attend to the crops without treading through among the fruit-trees, flowering plants, or whatever the borders may be occupied with. It will be well to examine every space where seed has been sown, as most early-sown seeds should now be vegetating or appearing above ground. If anything has failed, another sowing should be made at once, as it is still seasonable for sowing most crops. Windsor Beans sown now will come in for a late main crop. Those above ground will require attention to surface-stirring; or if the ground is stiff and wet, a fork used freely over the surface, and a little soil drawn to the stems, will help them, though in most cases we object to earthing-up, especially in light dry soil. Now is a good time to sow a crop of Champion of England Peas. If they are expected to stand drought well and keep long in bearing, they must have deep rich soil and be thinly sown. Peas sown under the shade of trees or buildings soon become infested with mildew. Stake all which are well above ground before they fall over. Beet in cold northern localities may be sown at the end of the month for main crop, but in warm early positions we have had it do well sown as late as the end of May. When large in size or forked, the quality is very inferior; and on poor sandy ground the roots are often small and handsome, but very stringy and not juicy. Cauliflower for late crops may be pricked out as soon as they can be handled; they will become sturdy, and more able to contend with drought and vermin. Those planted in March should have the hoe passed through them frequently. Dustings of soot or guano over the roots in showery weather will be of great service, but the latter has to be used with great caution. Celery may be pricked out under hand-lights or in a frame, till the plants become

strong for planting. They lift well when planted on manure a few inches deep, and 2 inches of light soil over it. The bottom under the manure should be hard, so that the roots cannot penetrate it. Ridges may be formed for Celery, if time and space permit. We never have our ridges more than a few inches deep after the manure has been dug into the bottoms. The greater depth the roots can run down in good rich soil, the less likely "bolting" to seed will be experienced. It is a common practice with extensive market-growers to plant Celery as they would Cabbage on the surface of their highly-manured deep soil, and the produce is generally excellent. Lettuces and French Beans are grown between the rows before earthing-up is done; thus the ground is fully cropped. Carrots may now be sown for a full crop. They do best on new ground deeply trenched and free from fresh manure. A good mulching of litter or grass given as soon as the Carrots are thinned is an excellent preventive for the ravages of grubs. When sowing the seed let the ground be mellow; draw drills from 1 foot to 15 inches apart; give a good dusting of soot and a little quicklime over the surface; cover in and level finely with a rake. If the ground should be very dry, a slight watering with a rose before covering in the small seeds will be of great advantage in promoting vegetation. Plant or prick out Cabbages as they become fit, and well stir with a hoe those growing. A few sowings from this till the middle of May will keep up a supply of young Cabbage all the summer and autumn. Broccoli and all other kinds of autumn and winter vegetables should be sown this month. Snow's, Grange's Autumn, and Walcheren Broccoli may be sown in small quantities, at two or three different times, up to late in May; and even when sown in June, will be useful in early localities. Onions for pickling (Silver-skinned is the best) may be sown about the end of the month on poor hard soil. If the early crop is coming up thinly, the patches may be made up, or other main sowings can be made. When the crop is thinned, vacant spaces can be planted up. Parsley, for a main supply, can now be sown, forming edgings for other crops. Where ground is plentiful, a good, deep, well-broken border might be sown. Potato-planting may be finished as soon as possible. For kinds with large haulm let plenty of room be given, as by their shading the ground the tubers lose the benefit of sun and air. Radish, Lettuce, and all other Salads, may be sown every two or three weeks if required. Lettuce require deep and very rich soil if they are wanted crisp and fine. They can be sown thinly where they are to remain, and thinned out when fit to handle. Tomatoes require attention to keep them growing; the larger the plants before planting them out, they will bear the better. The pots should be well filled with roots, and the

plants well hardened with air and sun, before they are placed outside, which will be late in May. Turnips may be sown every ten or twelve days in small quantities, as they soon go to seed. Dusting them with soot and wood-ashes in showery weather helps to keep fly in check. Vegetable Marrows and ridge Cucumbers may be sown soon. They require heat for some time to come, growing them in pots, shifting them as their roots appear through the soil ; and when they are to be hardened for planting out, the roots should well fill the pots. The leaves should be firm and dark green. In cold districts little can be done with ridge Cucumbers without hand-glasses or frames, and bottom-heat. Vegetable Marrows succeed better, but bottom-heat and hand-lights are required to start them. Cucumbers in frames require steady bottom-heat till the sun has more power. The top-heat may average from 65° to 75° at night, according to mildness or coldness of weather ; 10° or 15° higher, with solar heat, might be advantageously allowed. Attention to moisture at the root and in the atmosphere is of great importance. To promote growth, the structures might be shut up early in the afternoon, harvesting sun-heat, and the plants and every surface sprinkled with water that has been warmed. Where fruit is in flower, keep them free from damp, especially in dull weather.

Cleaning and turning of walks should be attended to before the season becomes too far advanced. Box-edgings may soon be clipped. In vegetable-gardens, the edging is kept much in the shape of a wedge, topping it level, then clipping it slanting from both sides. Box-edging round flower-beds shows the plants off better when it is cut flatly on top, and allowed to remain 2 or 3 inches wide ; but fancy is generally the guide with this. All lawns should now be well cleaned with the broom, and frequently rolled. Grass-edgings should be gone over, keeping them straight by paring, and cutting out the roots to keep them free from the gravel. No weeds, especially annual grass, which seeds freely at this time, should be allowed to remain on paths. The destruction of weeds early saves much time and labour.

Flower beds and borders turned over in winter, and not already broken up with a fork, should be attended to at once ; and if very light and loose, a moderate beat with the fork will be of service in keeping out drought. All plants for planting out for summer-flowering should be kept growing as coolly as possible, hardening and otherwise preparing them for planting out. This should be done gradually. If taken from heat suddenly and exposed, they will be severely checked. If nothing for hardening is more suitable, a trench can be made in any sheltered part, throwing the soil right and left ; and a line of boards placed round inside will keep up the earth. The plants

placed in this, and protected with mats or other suitable covering, will be kept secure from severe weather. When weather is cold, no more water should be given than to keep the plants from flagging, and give it in the mornings when mild. Where there is little glass to raise plants, many hardy things should be grown for summer decoration, such as *Cerastium*, *Viola cornuta* and *lutea*, *Arabis*, and suchlike plants. These are all useful for edging or belting beds and borders which are filled with plants in flower. Dividing many of these hardy plants is all that is required to increase their number. Many things may still be propagated. Young plants, when strong, fill the ground quickly, and are more useful in large beds and borders. Carnations, Pinks, Picotees, &c., not wanted for potting, may be planted in their blooming quarters at once; fresh healthy soil, free from wire-worms, is necessary to grow these well. *Ranunculus*, where they are coming through the soil, should have a slight stirring all over the surface of beds to prevent cracking; close the earth neatly round the crowns. If the weather should be very dry, give the whole of the beds a good soaking of water, and stir the soil slightly when the surface dries. *Chrysanthemums* should not be allowed to become pot-bound, or the leaves will become brown and drop off. As soon as the cuttings are well rooted, pot them off singly in small pots, using light rich soil, with a little sand mixed in it; stronger soil can be used as the plants become larger. *Fuchsias*, *Geraniums*, and other summer-flowering plants, should be kept growing steadily, giving air every favourable opportunity, and gently syringing mornings and afternoons, avoiding a damp stagnant atmosphere. Many plants at this season will require shifting into larger pots; when the roots fill the pots is the best guide for potting. Winter-flowering *Heaths*, *Epacris*, &c., will require to be looked over if they have been, or are to be, cut down. They should be allowed to break a little, and then examined at the roots. If desirable to keep the pots small, the balls of the plants could be reduced by either making notches down the sides and filling up with fresh soil, or paring the ball at top and bottom and a little round the sides, and repotting in same pot after it has been well washed. To grow plants vigorous and healthy, they require to be liberally dealt with, giving fresh shifts and healthy soil as the roots fill the pots. *Heaths*—such as *Hyemalis*, *Willmoriana*, and others of that class—do well with a start in heat, frequently syringing them; and as growth is made, more air and a cooler atmosphere are given. *Epacris*, when they have had their blooming-wood of the past season cut off, do well for a time in heat and moisture, but they require careful hardening afterwards. Soil for these plants should be, for the most part, fibry peat, mixed with a fourth of sand and charcoal. Some are

in favour of lumpy soil ; but, except when the lumps are fibry and plenty of sand in them, they go together, and ultimately become a sodden mass in which no roots can live. Well-drained pots are necessary, which have first a few larger broken pots placed over the hole at bottom, then a quantity of small ones, free from dust, making the whole compact, so that the earth cannot pass through among them. Most hard-wooded plants potted in peat require to be made firm in the pots, and plenty of room allowed for water. Balsams, Cockscombs, Egg-plants, and other free-growing plants requiring rich soil, do with less drainage if the soil is open. They should not be allowed to become pot-bound before the size of plant required is attained, then liberal quantities of liquid manure may be given. Stocks, Asters, Marigolds, and many other favourites, may now be sown. If gentle heat is given till they appear, so much the better. They require plenty of air and light while they are in the seed-beds or frames, and must not be allowed to become drawn up weakly. If they are pricked out to become strong before planting, the flowers will be much finer. Sweet Peas for a full supply of flowers may now be sown. If mice are troublesome, the seed may be sown in boxes, and when the plants are 2 or 3 inches high they may be planted out, giving a little good soil at their roots. Stake them before they get blown about by wind.

If boxes of plants are to be grown in windows, now is a good time to begin. Stocks, with a row of Mignonette as a margin, is an old favourite method of preparing boxes to decorate windows. Scarlet Geranium, with Cerastium, stands the sun well. Gazanias stand the weather well and flower freely. Whatever is grown, they require good soil and abundance of water at the root, and to be frequently sprinkled overhead, especially after hot dusty days. Soil which has not been previously used is best for all plants.

Fruit-trees will now require careful attention. Disbudding and thinning the shoots must be done often. No check should be given by taking off a large amount of wood and foliage at one time. Caterpillar and other vermin will soon show themselves ; a little hellebore mixed in water in which two ounces of soft-soap to the gallon has been dissolved, and applied to the under sides of the leaves, will have the desired effect. This is more applicable to Gooseberries. Any fruit requiring thinning should be done at different times, as much of it is liable to drop off, especially after cold wet seasons. M. T.



THE LATE MR CHARLES WILLIAM CROCKER.

It is with unfeigned grief and regret, in which we are sure the majority of our readers will share, that we this month announce the death of Mr Charles William Crocker of Chichester, known in these pages as "The Gleaner." He was one of the oldest and most regular contributors to this magazine—his last being his hundredth communication. Those who have for years read his interesting papers need not to be reminded of the vast fund of information he possessed on all subjects bearing on horticulture, which he communicated with ease and fluency.

As will appear from what follows, he may be said to have fallen a victim to his zeal in the performance of a great public duty—the propagation of the Cinchona-plant, with a view to its being established in various parts of India, so as to render this country independent of the precarious supply of quinine obtained from Peru. In this he was most successful, and he just lived to learn that the plantations formed with the plants he spent his health and strength in propagating are proving the wisdom of the attempt. We need hardly ask our readers if £50 a-year bestowed on the widow and orphans of such a man would be public money well spent; but we fear there is no such aid in store for them.

We make the following extract from the letter of a friend who knew Mr Crocker's career intimately, himself an excellent gardener:—

I had left Kew before the Cinchona propagation began, but I know that it was under his ardent prosecution of this that his health broke down. My friend could do nothing by halves, and, looking at the importance of the Cinchona to mankind, he entered into the work of propagation with all his native ardour; and it was some time early in 1861, when showing to his friend Mr Mackay, editor of the 'Geologist,' several thousands of the various species of Cinchona raised under his care, and just on the point of being distributed to the places fixed on in India and Ceylon for the trial of acclimatising this useful plant in British possessions, that the first serious indication of his failing health took place. He then burst a blood-vessel, and never seemed to recover from the effects of it. You will find some interesting letters of his published in the 'Cottage Gardener' of 1857 and 1858, headed "Notes from the Continent," and signed "Karl." This was while he was in the garden of M. Borsig in Berlin, not that of the Princess Royal, as stated in the newspaper notice of his death. He was an excellent plant-grower, and was very successful with many difficult things while foreman of the stoves and propagating-houses at Kew, of which he had the charge for nearly three years after coming home from Germany. He was an excellent gardener, his bent being thoroughly scientific; and he was of some assistance to Mr Darwin, in carrying out some experiments for him in illustration of the "struggle-for-life" principle of that gentleman's theory of the origin of species. I do not remember the exact nature of these; and as they bore more upon the science of botany than on horticulture, it does not matter for your purpose. For his walk in life and years, he was a man of most extensive information,

and was much devoted to the sciences of geology and botany. As to the success of the Cinchona trial, I may state that it has exceeded the most sanguine expectations, and that at Newera Ellia alone there are many thousands of plants produced annually from the stock first sent out from the hand of Mr Crocker.

We also subjoin a notice of his life and too early death from 'The West Sussex Gazette' of Saturday the 22d February:—

It is our painful duty this week to announce the death of Mr Charles William Crocker, which took place at Torquay, after a long illness, on Wednesday the 19th, in the thirty-fifth year of his age. The deceased had acquired some distinction in his native city for his various acquirements; and among other pursuits he had attained a reputation as a literary correspondent to various periodicals and newspapers. For some years past he had contributed the local news of the city to the columns of this newspaper; he was also correspondent to the 'Hants Telegraph,' and sketches written by him have appeared in the 'Leisure Hour,' the 'Gardener,' the 'Gardener's Magazine,' the 'Cottage Gardener,' &c., in which the writer's graceful style and extensive and accurate information were conspicuously displayed. He took great interest in the Chichester Gardeners' Improvement Society, of which he was for some years the president, and frequently lectured before its members on botanical and horticultural subjects. He was for many years a member of the committees of the Horticultural Society, of the Literary Society and Mechanics' Institute, and of the Working Men's Club of the city, and worked zealously for each. He was of late years one of the officials of our Cathedral, and his acquirements rendered him a desirable *cicerone* to its numerous visitors, and with much tact he used to direct their attention to the beauties of the building and its interesting monuments. He published in 1866 a very useful little work, entitled 'The Visitors' Hand-Book to Chichester: A brief account of the history and antiquities of the city, a complete description of the Cathedral Church, with a notice of remarkable places in the vicinity.' The deceased was never idle, but was constantly engaged in the conscientious discharge of whatsoever his hand found to do. He completely bore out the views of the poet who, in urging his fellow-mortals to set about some kind of work, thus beautifully expresses himself:—

“ Work ! for it is a noble thing,
With a worthy end in view,
To tread the path that God ordains
With steadfast hearts and true,
That will not quail whate'er betide,
But bravely bear us through.

It matters not what the sphere may be
That we are here to fill—
How much there is of seeming good,
How much of seeming ill;
'Tis ours to bend our energies
And consecrate the will.”

The late Mr Crocker, who was held in high esteem in his native city, was the son of Charles Crocker, the poet. He was formerly a pupil of Oliver Whitby's School, where he judiciously availed himself of the opportunity, under the direction of the present head master (who has ever entertained a very sincere regard for him), of laying down a solid foundation of knowledge, which helped him much in his studies in after life. We have the information from a reliable source, that at this period, while his diligence and application obtained the approbation of his

instructor, his love of innocent fun and boyish sports made him an especial favourite among his schoolfellows. When his time came to leave this establishment, he engaged himself in the service of the late Mr Silverlock in the vocation of a gardener. During his hours of leisure Mr Crocker was a constant evening visitor to the Chichester Museum, and studied most assiduously under the guidance of Mr Hills, the excellent curator, when he amassed a large amount of valuable knowledge in the sciences of mineralogy, geology, &c. From Mr Silverlock's he went to Leigh Park, and was under Mr Scott, who then superintended its beautiful gardens and pleasure-grounds. He subsequently held a responsible post at Kew Gardens, and after a time proceeded thence to the summer residence of the Crown Princess of Prussia (Princess Royal of England), near Berlin, a graphic description of which he wrote for the columns of the 'Brighton Herald.' On his return to England he again resumed his post at Kew; but, on finding the arduous duties attached to his employment were undermining his health, he returned to his native city, and employed himself usefully and honourably up to within a period of three months before his decease. We deeply deplore his early death, by which, we fear, a widow and five children are left not so well provided for as he himself could have wished. A large circle of friends to whom he had endeared himself will severely feel his loss. His remains were brought to his late residence from Torquay (where he had gone by the advice of his medical attendant for change of air) on Thursday evening last, and from thence they were taken yesterday for interment in Portfield Cemetery, near to the city. A large number of persons, including members of the Society of Odd Fellows, of which the deceased was an associate, attended the funeral. The Rev. Walter Hook officiated on the mournful occasion.

The 'Gardeners' Chronicle' of the 7th March has the following notice of his death:—

We regret to have to announce the death of Mr C. W. Crocker, which took place on the 19th ult., at Torquay, whither he had gone from Chichester, his native place, for a change of air. He was for some time foreman at Kew, and distinguished himself as an energetic and able cultivator, but was compelled to resign his post there on account of ill-health. He had previously been on the Continent, and had exerted himself in every way to become perfect in his profession, and he was no less desirous of aiding and advancing the young gardeners under his charge. From Kew he returned to Chichester, where he succeeded his father in the office of verger, combining with it the arduous duties of newspaper correspondent and reporter. He is favourably known by his contributions to the Journal of the Linnæan Society, as well as to the gardening periodicals. He also took great interest in advancing anything likely to benefit the young men of his native city. He was only thirty-five years of age, and leaves a widow and five young children.

We need not add another word to prove what a loss horticulture and other branches of science have sustained in the early death of such a man as Mr Crocker. And we feel sure that his widow—herself a most excellent person—and young family will have, at least, the good wishes and sympathy of every one who may peruse this notice of the death of one who, while he was much to others, was all to them.

NEW PLANTS OF THE PAST MONTH.

MR GRAHAM has shown his new Violet Victory side by side with the Czar, but it is really difficult to make out a difference ; perhaps of the two the new one is the palest. Only very lately somebody has said that the Old Giant Violet is as good as, if not better than, the Czar ; so, after all, these new Violets are not such great acquisitions as they appeared to be.

Cyclamen Coum album, raised by Mr Atkins of Painswick—a name closely identified with the Cyclamen—has received a first-class certificate. It has come true from seed for three generations, so its character may be regarded as permanently fixed. The foliage also is nicely marked.

Aucuba Japonica, variety quercifolia, is a very handsome large-leaved variety, in the possession of Mr Standish. In spite of the many varieties, and divers types of leaves, this has a considerable amount of character. It was awarded a first-class certificate.

New Orchids are just now abundantly produced. In the front rank stands *Oncidium macranthum hastiferum*, a very beautiful and novel Orchid, with large yellow flowers. It came from Mr Richards, the Gardens, Grimston Park, Tadcaster, and was awarded a first-class certificate. The same award was made to *Lælia elegans Turneri*, a fine and new dark variety of that noble species from Mr W. J. Cross, the Gardens, Melchet Park, Romsey, the seat of the Dowager Lady Ashburton. The same award to *Odontoglossum intermedium*, from Mr J. Day, of Tottenham. It is of a somewhat curious character, inasmuch as it resulted from a cross between *O. Bluntii* and *O. gloriosum*—the petals of the flower resembling those of the former, the *contour* of the plant being like that of *O. Alexandræ*.

Mr William Marshall, Clay Hill, Enfield, a young but enterprising Orchid-cultivator, has just shown a batch of imported varieties of *Cattleya Warszewiczii*, represented by some forty different types. Some of these were very beautiful indeed, and first-class certificates were awarded to two of them—viz., Tricolor, pure white, with bright rosy-lilac lip ; and Juno, clear pale pink, with rosy-crimson labellum. A few others were selected and named, which were also of great beauty. The varieties of *C. Warszewiczii* appear to be both as varied and as beautiful as those of *Lycaste Skinneri*.

It may prove interesting to know that the new bedding *Pyrethrum Golden Feather* comes equally true from seed as from cuttings. Some pans of both were recently shown by Messrs E. G. Henderson & Son in illustration of the fact.

A new bronze *Zonale Pelargonium*, in the hands of Messrs F. & A.

Smith of Dulwich, is worthy of notice, from the fact that the bright reddish-chestnut zone is so broad as almost entirely to cover the leaf, leaving only a spot of green in the centre of the disc, and a very narrow margin of the same. It promises to be a fine variety in this section.

Major Trevor Clarke, Mr William Paul, and others have been worthily engaged in the improvement, and also in the production, of new varieties of the common field Primrose. Some very pretty things, indeed, have been thus originated that will be very useful for spring gardening. It is noticeable that, as soon as these Primroses are subjected to higher conditions of cultivation, the Polyanthus form immediately appears in the form of a flower-stalk surmounted with a truss of flowers.

R. D.



ROYAL HORTICULTURAL SOCIETY'S FIRST SPRING SHOW, March 14.

THE competition in the matter of Hyacinths at this exhibition always imports something more than a mere passing interest to its annual occurrence, and the show of this season was no exception to this rule. In the class for eighteen Hyacinths, the competition between Messrs W. Cutbush & Son and W. Paul was somewhat keen, as well as in the class for twelve varieties; in each case Messrs Cutbush were placed first. Their eighteen varieties comprised Baron von Tuyl, General Havelock, Argus, Marie, and Grand Lila (very fine), shades of blue; Haydn, mauve; Mrs Beecher Stowe, Le Prophète, Von Schiller (a beautiful spike), Lord Macaulay, Florence Nightingale (Bivoet's variety), and Emmeline, shades of red and pink; Grandeur à Merveille (very fine), Gigantea, and Duke of Wellington (double), a marvellous spike; Snowball, Mont Blanc, and Mirandoline, shades of white. Their stand of twelve kinds was composed of six varieties only, according to the schedule, and there were therefore duplicate plants of the following: General Havelock, Grand Lila, and Baron von Tuyl, blue; Von Schiller and Macaulay, red; and Mont Blanc, white. Mr Paul's eighteen comprised Charles Dickens, King of the Blues, Argus (very fine indeed), General Havelock, Marie, Lord Palmerston (novel and very pretty), and Feruk Khan, shades of blue; Solfaterre, a very promising spike, not sufficiently advanced in bloom to be effective; Garibaldi, a fine bright-red variety; Koh-i-noor (double); Von Schiller and Princess Helena, shades of red and pink; Ida, yellow; Seraphine, Snowball (fine), Grandeur à Merveille, Gigantea, and Mont Blanc, whites.

It was gratifying to notice how the number of amateur exhibitors had increased; and though the specimens of culture fell somewhat short of the nurserymen's productions, there were yet some remarkably well-grown plants.

Mr W. Paul was first in both classes for new kinds—viz., those not previously exhibited, and those introduced since 1865. These shall have a more extended notice by-and-by. Messrs Cutbush & Son were second in each class.

With twelve pots of Tulips in six varieties, Messrs Cutbush & Son were first with Proserpine, Proserpine broken, feathered and flamed with red and yellow; Van der Neer, Toost van Vondel, and Rubens. Second, Mr W. Paul, with Vermilion Brilliant, Molière, Keizer Kroon, white Pottebakker, Proserpine, and Maas, lively crimson.

R. D.



G O S S I P.

A GRAND horticultural exhibition will be held in Leicester from the 16th to the 23d of July, under the auspices of the Royal Horticultural Society of London, and in connection with the exhibition of the Royal Agricultural Society.

We have just received the schedule of prizes of the Glasgow and West of Scotland Horticultural Society for 1868. There are to be four exhibitions; and what strikes us as remarkable in connection with this Society is the large sum offered by private individuals as special prizes. The Society offers £463, 14s. 6d., private individuals £115, 12s. 6d., making the handsome total of £579, 7s. The special prizes speak volumes of the taste for horticulture and liberality of our friends in the west. We hope their example may do good in other quarters. The first show of this Society took place on the 25th March; the next takes place on the 3d of June, one on the 8th of July, and the last for the year on the 9th September.

The Royal Caledonian Horticultural Society holds its spring show to-day, its summer show on the 10th of June, and the autumn one on the 2d September, on which occasion there will be a competition for six bunches of Grapes, the prizes for which have been specially subscribed.

Our friends in Dundee, having been so successful with their great show last year, are about to hold another this, as will be observed by an advertisement in our pages; and when we consider the spirit and effort manifested by the few promoters of this exhibition, we cannot refrain from urging such of our readers as have it in their power, to aid them by exhibiting whatever may give interest to the show.

The usual Yorkshire Gala, Floral, and Musical Exhibition takes place in Boot-ham Field, York, on the 17th, 18th, and 19th of June, on which occasion most liberal prizes are offered—two of £25 each, two of £15, three of £10, and many others of handsome amount. We have no doubt that, as usual, the gathering will be a grand one.

Thus there is no lack of great flower-shows in the provinces. Such is the liberality of the prizes offered, especially at Manchester and York, that the great

London societies must see to their laurels, else they will fall into the shade as exhibitions of horticultural skill.

We observe, by a notice in the 'Gardeners' Chronicle,' that the Royal Horticultural Society contemplates the establishment of a scientific committee, with a view to the advancement of the science of horticulture. Much good might be done by such a committee if constituted of the proper men, with sufficient means at their command, and especially with a first-class gardener to carry out their suggestions into practice. In this way results might be arrived at that would attract gardeners and others interested in such matters from all parts of the country, to learn the lessons such an establishment should be able to present to them. We shall watch with much interest the appointment of the committee, and with much more the results of its labours.



STYPTIC FOR THE VINE.

TO THE EDITOR OF THE GARDENER.

SIR,—In the number of the 'Gardener' for February you remark, with regret, that there is no styptic known that is a specific in all cases of pruning the Vine, or other hard-wooded fruit-trees and plants. Allow me to suggest one that you will find applicable, and which is always at hand. It is no less than the actual cautery, or red-hot iron. You are aware that veterinarians, and medical men too, find it necessary on many occasions to apply the hot iron to stay the bleeding from arteries and veins. I think you will find this plan to succeed admirably on the Vine, even on cutting down a tree or lopping off a large branch in full vigour of growth. As you may be a little sceptical on this point, I will give you my experience of its efficacy.

I have two Vines at first planted outside, on the end of a small orchard-house. On extending the house in that direction, they came to stand on each side of the central path, about 4 feet separate, and led up to the tie-rods, extending across these and the sashes east and west about 12 feet. Both plants were in vigorous growth—the one a Black Hamburg, the other West's St Peter's. In the spring of 1866 they were very slow in starting. I lost patience, and had a small heap of fresh stable-manure applied over the roots to warm the soil. I took the precaution to tie a mat round the stems, leaving an opening to allow of the escape of the extra heat by the side of the stem. Here was my mistake. The heat became great, and seemed to have fatally injured the bark at this point. The Vines quickly started into vigorous action, and had put forth the fruit-bearing spurs about 6 inches. One morning I discovered that both of them had assumed a sickly appearance. The foliage on West's St Peter's became like the purple Beech. On examination I found that it was fatally injured. I had the manure removed, when I observed a vigorous shoot starting near the surface of the soil; I therefore resolved to cut down the Vine, and to rely on this sapling to fill up its place, which I did about 2 inches above the young shoot. Having no styptic at hand, I applied a hot iron, and seared—nay, charred—the cut stem. Not a drop of sap escaped. Fearing that it might commence bleeding during the night, I sprinkled a little resin on the fresh cut stem, and again the hot iron. The young shoot, now receiving the whole sap and strength of the Vine, started off with amazing vigour, making considerably more than 1 inch every day; so that in the

autumn of 1867 the Vine filled up the space it formerly occupied, and at this date has been pruned, with every appearance of having a good crop of Grapes. The Black Hamburg, which did not suffer so much, was allowed to remain. It was sickly all the summer of 1866, recovered in the spring of 1867, and sent out vigorous shoots below the part where it also had suffered injury. G. F.

INVERNESS, March 18, 1868.

P.S. Lest it may be thought that the virtue resided in the sealing-up with the resin, I may mention that I have tested that in cutting down an overgrown Myrtle, which had become unseemly from being much cut for bouquets of its flowers and fruit. To this I applied no resin, and the experiment has succeeded in the same manner. There was no escape of sap, and several young shoots from the root promise to make a handsome bush soon.

[We are much indebted to our correspondent for giving his experience as detailed above. We, some years ago, tried the hot iron on Vines we cut back, but did not find it effectual. We also sealed the wounds over with sealing-wax after we seared them with the hot iron, but the force of the ascending sap made the wax fly off to a great distance. In the case our correspondent describes, he must have charred the wood very much; and besides, the experiment was not a fair one, for in the fact that the leaves ceased to grow and flagged, there was proof that the sap was not ascending as it should do. If our correspondent will try the experiment on a Vine in full health, and free from such injury as his received from the hot dung, he will find it fail. We have no difficulty in *preventing* the bleeding of Vines if they are taken before it begins. It is quite another thing to stop it when once in action.—ED.]



A WRINKLE, THOUGH A VERY MODEST ONE.

TO THE EDITOR OF THE GARDENER.

SIR,—I have never until the present year succeeded in growing Crocuses near my house. My neighbours doing a little in fancy "Chicken," so encourages the mischievous little sparrows, that as soon as the Crocuses put forth their golden noses, they were picked to pieces for very mischief's sake. This year I planted a bunch of Snowdrops alternately with the Crocuses. The motion of the graceful little heads of the Snowdrops scared away the birds as effectually as a line of bits of white paper attached to a string protects a bed of seeds.

Escheveria.—These attractive edging plants are just now coming within the reach of a man of moderate means. A few hints as to their outing-time and treatment would be, I think, acceptable to many besides your obedient servant,

DOWN SOUTH.



HORTICULTURAL SOCIETY OF LIVERPOOL.

FROM OUR OWN CORRESPONDENT.

THE sixth spring show under the auspices of this Society took place at the St George's Hall on the 18th ultimo. The hall was densely crowded in consequence of the very fine weather which existed here during the week. The show proved

in every respect a decided success ; and there was a great improvement on the exhibitions of previous years. The entries also out-numbered those of last year ; and it was estimated that not less than four thousand persons visited the show during the day.

Amongst the most successful exhibitors in the amateur classes were Messrs Dunbar, Manderson, Hignett, and Norrie. In the first, for 24 Hyacinths, Mr Dunbar took the lead, Mr Manderson taking second. In 18's, Mr Manderson showed his finest specimens, amongst which were noble spikes of Baron von Tuyll, Fabiola, and Von Schiller ; here Mr Hignett took the second, with equally fine specimens of Emmeline, Charles Dickens, and Nimrod. There was a beautiful display of Tulips ; in doubles Mr Hignett stood unrivalled, whilst Mr Manderson took the prizes in singles. There was nothing very new in the varieties.

The Azaleas, of which there was a very large show, were remarkably fine for the season, especially those exhibited by Mr Norrie, who deserves great credit for his style of training.

The greatest contest of the day was in the nurserymen's class for Hyacinths, between Messrs W. Cutbush & Son of London and Mr George Davies of Liverpool. The latter have been the most successful for two years consecutively, but on this occasion both competitors ran very close. The judges at length considered they were bound to give their decision in favour of Messrs W. Cutbush & Son. In this class were very fine spikes of Haydn, Von Schiller, Lord Wellington, Noble par Merite, and Marie.

The Chairman, Mr Tyreman, and R. W. Kerr, Honorary Secretary, deserve great credit for the entire satisfaction which they gave in respect to the arrangements.

The judges for Hyacinths were Mr Dean of Bradford, and Mr Ferguson of Belfast ; and those for plants, Mr Baines of Boudon, and Mr Kefford, gardener to Lord Skelmersdale.

REVIEWS.

HANDY BOOK OF THE FLOWER-GARDEN. By DAVID THOMSON, gardener to Lady Mary C. Nisbet Hamilton, Archerfield and Dirleton. Blackwood & Sons, Edinburgh and London.

We need not inform those who have visited the gardens at Archerfield and Dirleton, that Mr Thomson is thoroughly master of the subject he treats of in the very neat, well-got-up volume before us, wherein he deals with everything bearing on the propagation, culture, and arrangement of every description of plant that has hitherto been used for outdoor decorative purposes ; and all this in such a clear, plain, practical fashion that any lady or gentleman can give such instruction from the work to an active garden labourer as will enable him to arrange a flower-border with perfect taste in any of the many styles suggested in the work. There are lists of all the most suitable plants for every style of flower-garden, from the peer's to the cottager's, with plans of flower beds and borders illustrative of the principles inculcated by the author.

We make the following quotation from the introduction :—

"They formed part of the preparation in that Eden home, where a delicately sensitive human organism and an emotional mind were to vibrate like a well-strung harp of a thousand strings to every influence from without. Reflecting"

the colours which stream in light from the centre of worlds, the influence of flowers cannot be regarded as anything less than one of the gifts bestowed by Providence to make the sweets of life outweigh its evils. Philanthropists are now more than ever recognising the moral influence of flowers as an auxiliary in raising the masses of our pent-up cities—only as an auxiliary, however; for potent though that influence be, it falls short of stirring the profoundest depths and touching the highest chords of our nature.

“Having taken a glimpse within the threshold of the temple, and half bent the knee at the shrine where only poets and philosophers can acquit themselves, we retire to the less dreamy and chosen sphere of the practical.”

On the general subject of planting a flower-garden he writes :—

“My aim here is to assist the inexperienced in properly arranging various colours in beds and borders as one of the objects on which depends the beauty of a flower-garden, and one which lies more strictly within the province of the practical gardener than any other matter that belongs to flower-gardens in general. To give rules for the laying out of a flower-garden in its entirety does not range within the design of this work, although groups of beds and borders which are considered necessary to practically illustrate the principles which have here been laid down are given. After all, the disposition of flowering plants must be looked upon as the crowning touch of dress to a flower-garden; and the talent that can elaborate the flowery part of a garden may justly claim to rank side by side with that which produces a garden where flowers can be disposed of to advantage, and which is yet beautiful when not tricked out in holiday attire.”

But we must refer our readers to the work itself, which, though it extends to nearly 400 pages, has scarcely a superfluous line in it.

NOTES UPON A NEW OR RARE CARDUS. By Mr JENNER of Edinburgh.

This new *Cardus*, for such botanists seem to think it is, was gathered by Mr Howie and Mr Jenner in Ross-shire in the summer of 1867, and the pamphlet before us was read at a meeting of the Botanical Society of Edinburgh by Mr Jenner on the 12th of December 1867.

In his opening remarks Mr Jenner writes : “The discovery, in our day, of a large phanerogamous plant, apparently new, among the Scotch mountains, is a subject of much interest, and I confess that I have great pleasure and satisfaction in being able this evening to bring such a plant under the notice of the Society. Our mountain district, comparatively narrow, having been so thoroughly searched, it seems strange that the large *Cardus* which Mr Howie and I found last summer should have escaped the observation of botanists; and I feel sure that it must be not only limited in its distribution, but in all probability is a natural hybrid of recent origin, perpetuating itself as a determinate well-marked species. We found the plant during an excursion in Ross-shire and Inverness-shire in July 1867. The heads of flowers, five to nine in number, are placed on the axis in a corymbose form, are much smaller than *C. heterophyllus*, but larger than those of *C. palustris*.”

It is not a little strange that so large a plant should have remained undiscovered by botanists in this country till so recent a date. It has been appropriately named the Charles Thistle (*Cardus Carolorum*), Charles being the Christian name of both the discoverers, who are ardent cryptogamic botanists and microscopists. We learn that the Botanical Society of Edinburgh, with much taste, elected Mr Jenner president for the year.

A HISTORY OF VARIEGATED ZONALE PELARGONIUMS, WITH PRACTICAL HINTS FOR THEIR PRODUCTION, PROPAGATION, AND CULTIVATION. By PETER GRIEVE, gardener, Culford Hall, Bury St Edmunds. Printed for the Author.

This is a neat little work of ninety pages, clearly printed, on good paper, by the raiser of Mrs Pollock, Sunset, Italia Unita, and other fine varieties of the same class of charming Pelargoniums; and embodying, as it does, the experience of one who has bestowed much thought and labour most successfully on the subjects he treats of, it is well worthy the perusal of all who feel an interest—and who that has a garden does not?—in those gems of the parterre.

In the preface to the work the following very apt passage occurs, indicating what beautiful varieties of flowers may yet be latent as “embryos slumbering in their sires :”—

“The flowers of the earth have, somewhat poetically, perhaps, been compared to the stars of the firmament; and as the reflected light from some of the last created or most remote of these orbs is supposed to have not yet reached our world, so, with regard to the flowers of the earth, it may also be supposed that it is reserved for distant ages, aided by human intelligence, to fully develop their ever-increasing and inherent splendours.”

There is a chapter on the general subject of variegation in plants, leaving it, as all previous writers have done, undecided as to whether variegation from the green colour is a normal or abnormal state of any plant.

In another chapter there is a chronological sketch of the progress of seedling-Geranium raising. A noted landmark in this course was the raising of Flower of the Day by Mr Kinghorn. This variety was a great step in advance. It made its appearance in 1848, and was soon followed by such others as Attraction and Countess of Warwick. From Flower of the Day, impregnated by pollen from Tom Thumb, Mr Grieve raised Culford Beauty; then followed Rainbow, and ultimately Italia Unita. This latter Mr Grieve thinks is still unsurpassed by any of the silver-edged varieties. Mr Grieve gives a detailed account of the combinations he made use of to produce Mrs Pollock, Lucy Grieve, Mrs Benyon, Lady Cullum, &c. &c.

In the 4th chapter he treats of sports by which varieties are obtained. While he allows that such things do occur, he does not believe that any course of treatment can be resorted to which will with certainty lead to their development. While on this subject, we may mention that we always thought Flower of the Day was an accidental sport from Cerise unique; be this as it may, we have often seen branches of Flower of the Day sport back to something very like C. unique. Mr Grieve, like all who have grown Variegated Geraniums in rich soil, believes that it has a tendency to make them revert back to their pristine green.

Every detail necessary for the successful crossing of the sorts most likely to give successful results, as well as directions for sowing the seed and growing the plants till they bloom, are clearly given.

Chapter vii. treats of the propagation and after-management of those varieties that are selected for farther trial and ultimate retention.

In addition to these chapters, there is an appendix containing a selection of the best papers that have from time to time made their appearance in various periodicals bearing on the subjects of which Mr Grieve's work treats. Altogether, it is a very nice little book on a very interesting subject, and we advise all our readers to purchase it and peruse it for themselves.

Notices to Correspondents.

D. M'C.—The name of the tree of which you sent us a specimen is *Cephalotaxus Fortunei*. We have seen a Variegated Cineraria, but it was a very weak grower, and had an insignificant flower.

H. E., WELLINGTON.—The following Anemones will suit you : Admiral Zoutman, blue ; Blanche et Rouge, red variegated ; Covent Garden, scarlet ; Grandeur à Merveille, white and rose ; Shakespeare, violet ; Von Schiller, brilliant blue. These can be had at from 1s. 6d. to 2s. 6d. per dozen.

The following Ranunculuses will suit you : Belladonna, white spotted ; Fireball, bright red ; Grandiflora, rose lake mottled ; Nosegay, yellow spotted ; Purity, pure white ; Scarlet Star, bright scarlet ; Victoria, scarlet vermilion ; Reine de Holland, black ; La Fontaine, white ; Mont Blanc, pure white. These are to be had at from 7s. 6d. to 15s. per hundred.

YEARLE WOOLER, *5th March 1868.*

SIR,—An article on the stem-pruning of coniferous trees, &c., in your October number, page 378, by J. M'N., interested me very much. Having seen such pruning done in Bavaria, I have been trying it for a few years past, and find it answers very well. The only doubt I have is how far from the stem the branches should be cut ; I have generally left from 2 to 4 inches. I should feel very much obliged if you or Mr M'N. would give some information on that point.—I am, &c.

C. S.

[Perhaps Mr M'Nab will oblige by replying to our correspondent.—Ed.]

BEE.—Will Mr Pettigrew, or any other beekeeper who has experience in the matter, give in the 'Gardener' a few hints on preserving the purity of the Ligurian bee?

J. R.

A WELSH SUBSCRIBER.—The two 4-inch pipes will give you enough bottom-heat for your Pines. Cover them with flags instead of wood ; the latter would rot in a couple of years in such a position. Rubble stones laid over the pipes are preferable to boards, but flags make the best and most lasting job. Instead of three rows of 4-inch pipes fix four rows ; this will be none too much for a pine-pit such as you describe.

A SUBSCRIBER, STRANRAER.—If you have roots of the Canna, place them in heat in a frame or hothouse at once. When they spring 1 or 2 inches, divide the roots, taking care to have one growing bud to each bit, and pot them as you would Dahlias. Place them back into the frame or hothouse, and keep them there till they are well established in the pots ; then place them—say the first week of May—in a pit or frame, where they can be hardened before you plant them out, which will be early enough done the second week of June. Sow the seeds of Dianthus in May in a pan or box ; use light sharp soil mixed with leaf-mould or rotten dung ; cover lightly, and water with a fine rose ; place the pan or box in a cold frame, and give regular attention to keeping the soil moist till the seed vegetates. When the plants make their appearance, water when necessary ; when they have four leaves, prick them out in a box, pan, or frame, and shade till they begin to grow, after which expose them till they are transplanted where they are to bloom the following season.

THE GARDENER.

MAY 1868.



FRUIT-CULTURE.

THE PEACH.

(Continued from page 148.)



SELECTION OF TREES.—For open-air culture against a wall under 10 feet high, select dwarf-trained fan-shaped trees, one year trained from the maiden tree. For a wall above 10 feet high, select them dwarfs and riders alternately. We have already remarked that the Peach does not thrive well or live long on its own roots. Some varieties succeed well on the Almond, others do best on the Mussel Plum, while Mr R. Thomson, in his excellent work, 'The Gardener's Assistant,' strongly recommends the St Julian Plum, on which, he states, he has often seen the Peach growing to a considerable age without the slightest inequality between scion and stock—a very rare occurrence, for on most other stocks the scion swells out to a great size just above the junction with the stock, a state of matters that must be disadvantageous to the tree. In this matter, however, growers may safely trust the judgment of our leading nurserymen, and especially those who make fruit-trees a chief feature of their business, and they in their turn supply the trade with maiden trees on proper stocks. There is, therefore, little to fear under this head. When the trees are selected in the nursery they should be taken up with care, and every root preserved, and packed at once in damp litter, and forwarded to their destination. We have seen Peach-trees ruined by being allowed to remain unpacked in a shed, and their roots uncovered for a whole day.

On receipt of the trees they should either be planted at once or laid in by the heels against a wall till they can be planted.

Planting.—If the border is prepared as we have directed, this is a simple process. The trees should be placed 15 feet apart, therefore mark the wall at that distance apart, and remove the soil to something more than what will be required to lay all the roots out like a fan, and cover them to the depth of 6 inches with the soil. Examine the roots, and if any of their points are broken or bruised, remove such parts with the knife; remove also any unripe points on the branches, cutting them back to a wood-bud, but avoid the barbarous system of “cutting back,” which is sometimes had recourse to; let all the mature wood remain. Place the tree where it springs from the soil not closer than within 4 inches of the wall, so that it may have room to grow without getting bruised against the wall. When the trees are planted, tack them loosely against the wall till the border settles down, so that the branches may be able to slip through the shreds and avoid “hanging.” Give each tree a watering through a rose, and the operation of planting may be considered complete. Peaches, like other fruit-trees, may be planted at any date from November till April. We, however, prefer the former to the latter season. At the same time we may remark that we have lifted Peach-trees in full bloom, and transplanted them without losing the crop of fruit.

Pruning and Training.—As a rule, we consider the fan shape the best for Peach-trees. There are various modes of fastening the trees to the wall. In some instances the walls are trellised with wire, and the branches tied to the wires. This we think objectionable, as it deprives the tree of the principal advantage to be derived from a wall—viz., shelter and heat, as when the branch is in immediate contact with the wall. When tied to the wire a cold current of air passes behind the branch, betwixt it and the wall; and not being in contact with the wall, it gets little benefit from the heat the wall has absorbed from the sun's rays. Under glass the wire trellis is all that can be desired; but for open-air culture it should be avoided. Another system is that of driving studs into the wall while the mortar is yet soft, and fastening the trees by means of small cord to them. This has some of the disadvantages of the trellis, the branches hanging to some extent away from the wall; and besides this, the studs often stand in the way of the branches, come in contact with them, and injure their bark and cause gumming. On the whole, we prefer the old method of nails and shreds. This system requires that the trees should be unnailed every year, and the nails and shreds placed for a short time in boiling water to destroy insects, after which they may be used again.

There is an advantage in allowing the branches of the Peach-trees to hang out from the wall for a couple of months from January till March. It retards the blossom, and gives it a greater chance of escaping injury from spring frosts. We prefer deferring the pruning of Peach-trees till the buds begin to swell, so that there can be no mistake as to which are wood and which are fruit buds. In no circumstances cut to any but a wood-bud, as no fruit can come to maturity if it is any distance beyond a wood-bud; nor do we approve of a general cutting back of all the young wood; we prefer the thinning-out of such branches as are least healthy and fruitful, so as to make room for the more fruitful branches. One great and prevalent error in the training of all fruit-trees, and especially Peach-trees, is the laying in of too much wood. In all such cases there are two improperly matured branches where there might have been one well-matured one. When the leaves are crowded on the top of each other they lose the all-important influences of light and air, and cannot mature the wood as they would do if they were not crowded so. When trees are planted in too rich soil, they make rank unfruitful wood. In such circumstances we have seen them severely cut back, which is the worst possible means of curing the evil. The proper treatment would have been to lift the trees, cut back some of the strongest roots, and replant them in poorer soil.

There is no treatment more likely to keep Peach-trees in a healthy fruitful state than periodical transplanting. Say that one-third of the trees are so treated every year, giving them more space on the wall as their sizes may require, and placing a little fresh loam under and over their roots each time they are moved, cutting back any straggling or coarse-growing roots. This will prevent the growth of "watery shoots," and keep the trees fruitful and in fine health, all other things being right. As soon as the wood-buds are started a quarter of an inch, the process of disbudding should be commenced by removing all such as are least favourably placed. This should in a few days be followed by a second disbudding, leaving only one shoot near the base of the young or last year's wood, and another at the point; these to be retained, that at the point to prepare sap for the fruit on the branch, the other to furnish the bearing wood for next year, if it is found necessary to cut out last year's shoot, which has just borne fruit, to its junction with this lowest shoot. In this way we find no difficulty in replenishing trees with an ample supply of young fruit-bearing wood to their very base. Some recommend the "pinching system" of summer pruning; we disapprove of it, for two reasons—first, because it leads to the formation of spurs, that of necessity project from the wall, and lose the benefit of its protection as much as if the

wall were trellised. And in the second place, because we find that by repeated pinching, especially in cold localities, the fruit-buds are not well matured on the late-made portions of the spur. We might add to these reasons, that the tree looks unsightly as compared with the method we have recommended.

General Management.—As soon as the trees are nailed to the wall, provision should be made for protecting the blossom from spring frosts. It is of great advantage to have a cope on the wall that projects from 6 to 7 inches. Into the face of this coping, and at distances of a yard apart, ring studs may be dowelled, and by means of a cord through each ring the covering can be put up and let down rapidly. It will be necessary to prevent the flapping of the covering against the blossom of the trees. This can be effected by placing a series of poles with their points under the coping, and their bases a few inches in the soil about 18 inches from the wall. The cords used for pulling up the covering may be fixed to these poles. Where the sheltering material is an ordinary net, it may remain on during the day as well as night; but where it is of thicker material, it should be taken down every day. The 20th of May will be as early as it will be safe to dispense with means of protection, for we have seen Peaches killed by frost when they were the size of Beans. As soon as the fruit is set and beginning to swell, they should be thinned to three on each young shoot of last year's growth, and when fairly stoned they should receive a further thinning, in no case leaving more than two fruit on any such shoot; where fine fruit is desired, one will be enough. If mildew attacks the Peach-tree, the only remedy is sulphur, which should be dusted over the affected parts. The Noblesse Peach is very liable to this disease. If red-spider, copious and frequent washings with water from an engine should be given. If aphides, whether green or black, the remedy for the open wall is a syringing with water, mixed with tobacco-water at the rate of a gill to the gallon. When under glass, fumigate with tobacco three nights in succession, then a good watering with clean water from an engine, but see that the trees are dry when they are fumigated. As soon as the young wood has made growths 6 inches long, it may be laid in against the wall. Continued attention must be given to this during the season, as the young wood grows; for unless it is attended to in this respect, it loses the beneficial influence of the heat and shelter of the wall, and does not ripen as it ought to do. When the fruit begins to take the final swelling, go over the trees and push the leaves aside, so that they may not shade the fruit from the sun's rays, all of which are required in our climate to give it colour and flavour, without which the Peach is a poor fruit. Rather than not get the fruit well exposed to the sun, we recommend

the removal of the half or the whole of any leaf that may in this sense be refractory ; but as a rule avoid the removal of many of the leaves ; rather remove an individual branch altogether than many leaves from branches that are to be retained. Earwigs and ants sometimes attack the fruit on the open walls. The best way is to destroy the ants as recommended in the paper on Fig-culture, and to catch the earwigs by laying small pots with a little dry moss in them along the bottom of the wall, into which these pests will congregate during the day, and where they can be destroyed by putting them into hot water. When the fruit begins to ripen, the trees should be gone over daily in the afternoon, and all that are readily detached gathered and placed in the fruit-room till required for table ; but by all means avoid thumbing or in any way bruising the fruit. If great care is not exercised in this respect, decay commences immediately ; and as far as practicable, Peaches should be consumed within a day or two of their being gathered, for if ripe when gathered, and they are kept beyond that period, they become insipid. When the fruit is gathered, any superfluous wood in the trees should be cut out ; and they should receive a good washing from the engine, and be kept thoroughly free from insects. This is a matter of much importance, and one frequently neglected. In October, when the wood is nearly ripe, a birch-broom may be run over the trees gently, to clear off such leaves as have ceased to be of service to them, and allow those still active to complete their work.

W. T.



NOTES ON GREENHOUSE PLANTS.

(Continued from page 161.)

BALSAMS.

THE Prince of Annuals may not be an inappropriate appellation for this magnificent genus, their gorgeously brilliant masses of flowers (Camellia-like, and sometimes as double), tinted, flaked, and spotted, partaking of almost every imaginable colour ; the glossy transparency of their stems, their bold spiral form, the astonishing luxuriance of their growth, contribute an inestimable combination that has wrought most happily on the sensibilities of the flower-admiring public. And no wonder ; the whole appearance of the plant breathes a tale of brilliant sunshine, balmy air, and tropical skies, which creates a momentary spell on the thoughts, and carries the imagination far away to their home of quiet solitude and grandeur.

When we consider the invaluable cultural instructions, of but recent

birth, extant, we feel almost constrained to relinquish these Notes as a superfluity; and in deference to those that have already spoken, we shall endeavour to condense our remarks into as narrow a margin as possible.

Culture in Hot-bed Frames.—A good command of heat is the first requisite to insure satisfactory results with the Balsam, be stove, vinery-pit, or frame their destined growing quarters: indeed, among the structures named, in our opinion the common frame is the most commendable, if the essential heat can be maintained. The moist heat arising from the hot-bed materials, after its noxious vapours are dispelled, acts as a powerful stimulant, and seems thoroughly to meet their requirements. From the middle of April to the commencement of May is an excellent time to sow the seeds, at which period there is little to fear from the severity of the weather compared with a month earlier. A light porous compost ought to be provided, adding a small portion of well-reduced cow-manure in a dry condition if the soil is poor, but if rich enough better withhold the manure; add also a little fine river-sand, and reduce the whole to a fine condition with a riddle. Scatter on the seeds, and complete in the usual way with a sprinkling of water through a fine rose, and plunge the pots in the hot-bed frame among sawdust or leaf-mould. Keep slightly moist until the seeds have pushed through the soil, when air should be admitted, and slight shading afforded to subdue the strong sun rays; and as soon as the seed-leaf is fully developed the plants may be potted individually into thumb-pots, carefully watered with tepid water, and restored again to the frame plunged as before, but this time within 9 inches of the glass, which ought always to be the distance while the plants are growing in this compartment. Keep the frame rather close and shaded until root-action is at work again, when shading can be discontinued and more air admitted.

The Balsam above most plants delights in abundant heat, light, air, and moisture, and is likewise a gross feeder; and to be successful in its cultivation one must study to keep up abundance of good living, that no check may be experienced from the day it becomes a plant till that on which it is loaded with ripe seeds, excepting the slight check it receives while undergoing the hardening process in cold frames before being placed in the conservatory.

When it is found the condition of the roots demands a second shift of pots, then will be the time to transplant them into pots two sizes larger, using a compost of equal parts loam, sand, leaf-mould, and about a fifth of the whole of the manure already prescribed, lowering their balls as much as practicable in the operation, which will materially enhance the appearance of the plants. Continue a rigorous

adherence to the rules given as regards ventilation, maintenance of proper heat, providing abundant moisture for the roots, always heating the water equal to the soil, keeping the plants near the glass, along with steady attendance to shifting into larger pots, always supplying them in time to avoid any risk from pot-binding, lowering the balls at every potting until they occupy pots of 11 inches in diameter, and by the time they have arrived at this stage they will be splendidly furnished with branches that will extend over and all but cover the soil in their pots.

Dewings of water with a fine syringe are of great importance after days of powerful sunlight, not only to invigorate the plants, but to prevent a visit from red-spider and other insect pests, which commit great devastation when they get a footing. Feeding the plants should not be neglected as soon as they have begun to establish themselves in their last shift. Mix guano at the rate of 1 lb. to 30 gallons of soft water; copious applications of this liquid will be beneficial, supplied daily in dry hot weather when evaporation is powerfully at work. This may be continued until the flower-buds show signs of bursting.

Training.—With reference to this division of the business, the plant should be assisted to assume its natural pyramidal form as near as practicable, and this without pinching or pruning the shoots. If all has prospered well throughout their growing stages, sufficient branches will be provided, that will only require the practised hand and eye to accomplish this almost to perfection. A good method is to tie out the growths horizontally as they make progress, bringing down every successive set by degrees as soon as they can be handled, until the figure is completed, securing the branches with threads of matting to a collar round the rim of the pot. These strings can be removed as soon as the branches have got properly set; after which, attention to regular turning of the pots will secure their forms to the end.

KALOSANTHES.

Perhaps better known as *Crassula*. From this lovely genus of greenhouse plants we have several charming species that ought to take their places amongst us generally. The old *K. coccinea superba* is said to have been introduced into Europe from the Cape of Good Hope as far back as 1710. It is not many years since *K. coccinea* stood second to none, and was universally acknowledged one of the most dashing exhibition plants that could adorn the showroom; but it must now be acknowledged that it has fallen far into the rear in public estimation; not that it has lost any of its lustre with age, which will be clearly demonstrated if the opportunity is given it to compete with others.

Propagation.—The *Kalosanthus* family all strike as freely as a Willow, placed in a little bottom-heat among sandy loam. Any part of the stems will root and burst into growths, but the young points should be preferred; cut the base of the cutting straight across with a sharp knife, and dress away a portion of the leathery leaves that embrace the shoot; allow them to lie a day in the shade, when they may be inserted in the soil. When properly rooted, transfer them singly into 3-inch pots, and keep them growing as rapidly as heat, moisture, and all the other appliances at command will allow; repot with the first indication of the roots netting the balls, and give them a rich loamy compost; pinch out the crowns on every occasion, after they have produced shoots 3 inches long, until the desired number of leaders have been obtained. Turn the plants and keep them near the glass, that nice short-jointed stubby plants may be formed. Continue thus, potting, growing, steadily pinching and tying up the branches till the end of September. After this time the plants may be allowed quietness to form their flower crowns, that will repay the labour the following summer with dazzling coronets of scarlet flowers.

Another variety should be in every collection—*Miniata*; it is a light variety, more dwarf and bushy, and a fine contrast with *Coccinea*.

A. KERR.

(*To be continued.*)



A FEW MORE REMARKS ON THE CULTIVATION OF THE AURICULA.

As promised after my recommendation of suitable soil in the January number, it was my intention to have followed up that article in the February number on my mode of treatment of the plants through the spring months up to the time for repotting; but through misfortune and bad health I have not had the opportunity I should have liked; and as that time has now gone by, I shall let that part of the article rest till the January number of 1869, when it will be more suitable for the season; so at present I shall only give a few hints on the subject of potting-off and after-treatment of the plants through the summer months. To those who have got their fresh soil ready for use my recommendation is, after the middle of July arrives lose no time in commencing repotting; get that part of the business finished before July is out: the old notion is that August is quite soon enough to repot, and in my time I have neglected and have known others neglect potting till the end of August or beginning of Sep-

tember : now that is the old system, silly as it is old, like many other bygone notions ; practice and common sense teach differently. The Auricula, like many other kinds of plants, requires proper treatment at proper time : the benefit of potting early I found out years ago, and I know other parties who have taken my advice in that matter can testify to its truthfulness. Neglect the plants till the middle and latter end of August, the old mould gets dry and finished up ; the plants suffer ; the fresh fibrous roots, which they ought now to be pushing, are drying off in consequence ; while if planted early, while vegetation is going on, the new fresh and wholesome soil encourages and stimulates, as it were, new life into the plants ; and while the growing season is on, they are establishing themselves, and being made fit for declining autumn and coming winter.

JOHN HEPWORTH.

HUDDERSFIELD.



NOTES ON HARDY HERBACEOUS PLANTS.

DORONICUM is a genus of hardy herbaceous plants, widely and familiarly known in Britain, being abundantly represented in many parts of the country by the common *D. pardalianches*, which, where it takes possession, does so most tenaciously, and in so far as regards herbaceous vegetation, exclusively, for little else can cope with it when circumstances are favourable to its growth. On that account this species is regarded very commonly as a mere weed, and where it encroaches on the dressed parts of a place it no doubt should be held in no higher estimation ; but in its own proper domain it is a striking and ornamental plant, and may be turned to good account in its rather brief period of display. Where colour is an object in woodlands, or on banks with sides so steep that few plants will continue to live on them, *D. pardalianches* may with little trouble and certainty be introduced. It has lately been mooted that it is fit even to take its place in the spring flower-garden ; and as tastes differ very much in such matters, there is no reason why it should not be made use of in that way if the parties concerned are pleased to do so ; but from its rampantly encroaching habit of growth, those who use it in combination with other plants should take into account that it will prove a very troublesome subject. *D. plantagineum*, another species indigenous to this country, but more rare than the last-noticed sort, is very distinct, and desirable for the same purposes as noticed above. It is of less encroaching habit than the common Leopard's Bane, and would be more manageable in the spring flower-garden. It flowers in May, and the flowers are produced usually in single heads at the extremities of the flower-stems,

which are about 2 feet high. *D. Austriacum* is a dwarfer sort than either of the foregoing, being only about a foot in height. In the writer's opinion it is the best species in the genus; the flowers being large and very bright in colour, and the habit of the plant being more manageable, it is altogether better adapted for a variety of ornamental purposes: like the two preceding sorts, it flowers in May. *D. columnæ* is a fine useful plant for purposes such as have been considered, but being less rampant than the first-noticed sort, it is perhaps more desirable: it blooms also in May, and grows to the height of about 2 feet. *D. Caucasicum* is a pretty sort of dwarf habit, which flowers nearly two months later than the sorts just noted: it is well worth a place in the mixed herbaceous border, but may be used for the same purposes as the other sorts. *D. Altaicum* is the only white-flowered species with which I am acquainted. It is rare, and grows to about a foot in height, and flowers in June and July. These plants all prefer a light and rather dry soil; they are, however, very accommodating in this respect. I have met with the British sorts growing in different localities, under extremely opposite conditions, here in dry bare mountain pastures, and there on steep banks of clay, from which water oozed more or less at all seasons of the year.

Stokesia cyanea is another composite flowering plant of considerable beauty. I am not aware of any but the species just named. It is an old plant, but rare. I have never met with it but in one or two public botanical collections, and am not sure that it has ever had a trial in private gardens. There is an impression with those who are acquainted with the plant that it is not quite hardy; and as it is a native of Carolina, and other southern States of America, it may not be sufficiently hardy to stand unscathed the rigour of our northern winters, but it stands safely without any protection in the neighbourhood of London; and with the protection of a densely-clothed spruce branch, or a little rough coal-ash put about the collar of the plant at the approach of winter, it may be presumed that it would stand quite well in any part of the country. It is a pretty plant for the mixed border; the flowers are deep sky-blue in colour, large and lasting, and produced in no small abundance in August. At its full growth it is about 2 feet high. It is described in some catalogues as an evergreen, giving the erroneous notion that it is a shrub. It is merely, however, an herbaceous plant. Any good garden-soil suits it quite well.

W. S.



ON RAISING SEEDLING PEACHES.

Of the numerous and refined pleasures offered by horticulture, few are more delightful than the production of new plants from seed. The pursuit is limitless and full of pleasing though often tantalising variety, and no small stock of patience is requisite; but, *per contra*, a certain reward is given with indiscriminate liberality by nature to the chance efforts of the careless, and to the careful and deeply-laid plans of the skilful experimentalist. The numerous fine varieties of fruits obtained by accident prove this thorough impartiality; the theory of progressive improvement held by Van Mons has been negatived by the result of his labours, very few of the thousands of seedling fruits raised by him remaining to attest by their excellence the truth of his theory. This is encouraging to the beginner, and not disheartening to the experienced; the prizes being still open, and the more valuable from the difficulty in gaining them.

Following at a humble distance the experiments of my father, I have for some years watched with great interest the variation of Peaches and Nectarines from seed, such observations being rendered possible after the introduction of orchard-houses; and I now venture to make a few suggestions to your readers, in the hope that the improvement already established may be carried a step farther by others. The Noblesse and Grosse Mignonne Peaches are so excellent that they can scarcely be improved, except in size. These two varieties constitute, therefore, the sources from which improvement may be expected. One of the most desirable qualities to obtain in a new race of Peaches must be precocity in ripening; and one of the earliest of Peaches is the Early Nutmeg, worthless as a fruit, but valuable as a parent. By fertilising this sort with Grosse Mignonne or Noblesse, a large early variety may be hoped for. As a union which may possibly lead to a curious result, I should recommend fertilising the immense Pavie de Pomponne and the Fairchild's Early Nectarine with the first-named Peach.

The Petite Mignonne, a pretty early Peach remarkable for its fertility, by judicious crossing is capable also of being made the progenitor of vastly improved descendants. Its union with the Stanwich Nectarine may be productive of some interesting varieties. The Early Ann and the Acton Scott, though now superseded, are well known and available; both varieties may be improved by crossing with large Peaches—such as the Royal George, Noblesse, and Grosse Mignonne. The early Peaches I have named are now superseded by vastly improved varieties—such as the Early Rivers, the Early Louise, and the Early Beatrice; but they are still valuable as parents, and

they may by skilful crossing originate some sorts possessing the requisite faculty of precocity. A seedling Peach has already been raised, which for two successive seasons has ripened from the 6th to the 10th of July, three weeks before the Early Nutmeg, at one time the earliest of known Peaches. This is a great step in advance, and will be especially valuable in Scotland, as a Peach ripening in the south of England in the beginning of July would probably ripen in the early part of August in Scotland, and would most likely ripen on walls in districts where the Peach is hardly to be obtained. Good Peaches ripening in the Peach season are plentiful enough, and the standard of excellence seems to have been reached in the Grosse Mignonne, the Galande, and the Noblesse; but an improvement may be established in these in point of size and hardiness. The Alexandra Noblesse, raised from the Noblesse fertilised with the Stanwich Nectarine, differs from the Noblesse in having crenate leaves and globose glands; and it is not liable to mildew, a point of which the importance will be at once acknowledged by all gardeners who have grown the Noblesse, which has a strong tendency to be affected with mildew. The mixture of the Stanwich has modified this tendency, and has even almost improved the flavour of the fruit. I do not doubt but that the crossing of the Grosse Mignonne with the Stanwich Nectarine will also produce some remarkable results. To obtain an advance in size, the enormous Pavies or Clingstone Peaches, which are amazing for their size, should be used as parents, and crossed persistently with the Stanwich Nectarine, the Grosse Mignonne, and Galande Peaches, and also with the small early Peaches before referred to.

I cannot lay too great a stress upon the invaluable qualities of the Stanwich Nectarine as a fertilising agent; it is robust, hardy, free from a tendency to mildew, and gives fruit very different from the ordinary Nectarines in size and flavour; and has the additional recommendation—no mean one in an orchard-house—of having large and brilliant flowers, a property that should be always considered in starting an orchard-house. The experiment of crossing Peaches with Nectarines is very interesting, the produce being given without any regard to parentage, Peaches producing Nectarines, and *vice versa*. The French pomologists, or at least some of them, deny this fact; but as I have undoubted proof of this eccentricity, I must beg to differ from “Messieurs les Pomologues,” and to assert that the best evidence can be given of the indiscriminate nature of seedling Peaches and Nectarines. As interesting and distinct races of Nectarines for crossing with Peaches, I may mention the New White and the Pit-maston Orange.

The late Peaches, of which the Bondin, Teton de Venus, and Dese

Tardive, may be selected as the types, have a great tendency to drop their fruit before coming to maturity, except in very favourable seasons. This fault is probably due to the fact that the tree has finished its growth before the fruit is fully ripe, and with the cessation of the circulation of the sap, the power of the fruit to derive nourishment from the tree is weakened. To obviate this defect, the experimentalist should select varieties of Peaches or Nectarines which continue growing to a very late period; successive generations will produce improvement in size and flavour. An American Peach named the Poole's Late Yellow will hang on the tree until the middle of November; Thomas's November, Pride of Autumn, Baldwin's Late, and the Heath Clingstone are November Peaches, and if crossed with the Stanwich Nectarine or the Noblesse and Grosse Mignonne Peaches, some singular sorts will no doubt be originated, if planted in a dry and cool house, with sufficient heat at command to exclude frost. As Peaches may be preserved a long period, the time may not be far distant when the dessert on Christmas-Day will not be considered complete without the noble-looking fruit which has been the glory of the summer and autumn.

T. F. RIVERS.

SAWBRIDGEWORTH, HERTS, *March 20, 1868.*



CULTURE OF THE CHRYSANTHEMUM.

(Continued from page 151.)

SPORTS.

MANY botanists and expert gardeners have endeavoured to account for the "Sports" of flowers and foliage which so often happen in plants under cultivation, and also in a state of nature; and many practical men, from the fact of fewer of these freaks occurring in, or being recorded of, plants in a wild state, are of opinion that they are the result of disease, produced by culture; whilst others argue that they are caused by chemical agency, but in what manner has never been explained. Many have been the theories broached, yet the facts remain without any satisfactory explanation, that annually many plants produce, from suckers or branches, flowers or foliage so different from the remainder of the plant, and without affecting it in any way, that when propagated they seem like a new species. With the examples of the wonderful tricolor and bicolor Geraniums so recently produced, many of them by these strange Protean changes in the foliage called "Sports," it will create no surprise to learn that

the Chrysanthemum is affected in the same way, though the Sports are, in the majority of cases, confined to the flowers. These changes occur in small as well as large collections, and under all modes of culture. Perhaps one small branch will assume a lighter or darker shade, or a tint quite foreign to the variety upon which it appears. Very often a white variety will produce a shoot with lilac or golden blossoms. In this strange manner many of the best varieties have been produced. The great difficulty is to perpetuate these Sports; propagating from them will be found no easy matter. Many instances have happened where a valuable and distinct Sport has been lost through this difficulty, and this in places supplied with every convenience for the purpose. Two years ago I was favoured with a small branch bearing exquisite lilac flowers on the beautiful incurved ivory-white variety called Vesta, but in spite of every endeavour I was unable to get a single cutting to root, and in all probability I may never have another opportunity with that variety.

When a plant produces one of these freaks, the pot should be plunged in a slight bottom-heat, so as to induce the dormant eyes on the branch to break, and afford a number of cuttings, of which, in all probability, if well managed, a number may be struck in the usual way. The young plants of these Sports should be grown in a variety of soils, both in pots and in the open borders, so that the permanency of the Sport may be tested before the variety is added to those in cultivation with confidence. No reliance must be placed on these Sports until so proved, and I should always hesitate to grow any Sport as a specimen plant until its permanency had been established.

THOMAS HIGNETT.



NOTES BY THE EDITOR.

(Continued from page 167.)

THANKS to the good arrangements effected with the various railways by the Directors of the Glasgow and the West of Scotland Horticultural Society, we get a ticket at Eskbank station to Glasgow and back, enabling us to stay two days, for one fare. Consequently, we visit the exhibition of the above Society, held in the City Hall on the 25th of March. The day was cold and wet, and the Queen of the West had on her dingiest mantle and looked anything but smiling; notwithstanding all this, the exhibition was a great success in every respect. The subjects exhibited for competition were both numerous and highly meritorious, and from the first hour when the Hall was opened

to the public till it was shut at 9 o'clock at night, it was crowded with admiring spectators ; and we learned that the result of the day's operations was to the entire satisfaction of the treasurer of the Society. The Hall itself, instead of being decorated with evergreens, was neatly draped all round the front of the gallery with crimson cloth looped up with yellow cords, and from the ceiling were suspended a great number of flags.

Amongst the subjects exhibited we noticed a very extensive and interesting collection of dried Ferns by Mr P. Watt, foreman, Garscube Gardens. The Azaleas, Rhododendrons, and a number of fine specimens of *Deutzia gracilis*, gave the centre of the Hall and front of the orchestra a very gay appearance. Along the sides, under the gallery, were arranged extensive collections of very fine pots of Tulips, Narcissus, and other spring bulbs. The weak point of the exhibition, as compared with former years, was the absence of the fine Tree-ferns and other ornamental-leaved plants from Hamilton Palace Gardens and Ferguslie House. It wanted something to relieve the eye from the glare of Azaleas and Rhododendrons. The principal exhibition of Hyacinths was in a separate room ; they were numerous and fine. The best collection of twelve sorts contained the following : Von Schiller, Mont Blanc, Charles Dickens, Macaulay, and Baron von Tuyll. Space, however, forbids that we should give lists of the prizes of all the great exhibitions that take place during the season ; therefore, to avoid being invidious, we shall give them of none ; nor is it necessary we should, seeing that all the local journals do so.

From Glasgow we visited Meadow Bank, the seat of Thomas Dawson, Esq. Whoever takes a ticket by the Caledonian Railway from the "south side" station to Uddingston, which is 6 miles above Glasgow, on the banks of the Clyde, will, on approaching the station, observe a very modest-looking villa close to the river, with a goodly number of hothouses behind it, and will remark to himself that the proprietor must be a keen horticulturalist, else he would never have spent so much money on hothouses, and so little on his own residence. This conjecture is perfectly correct, as will appear in the sequel.

Arriving at the Uddingston station, we make our way to the garden, and meet with Mr Anderson, so well known as one of, if not the most successful Orchid grower in the kingdom. In proof of our statement we may mention that the Royal Horticultural Society of London awarded him the "Bateman medal" for the finest exhibitions of Orchids made at their meetings during the years 1866-67. No small honour, especially when it is considered that he had to send his plants and spikes of bloom so great a distance from where they were grown to the exhibitions in London. Under Mr Anderson's guidance we

enter the East India house, where we see plants of *Vanda suavis* 6 feet high from the pot, with twenty stems or breaks; *Vanda Batemanii* 8 feet high; plants of *Vanda tricolor* with fifty breaks; and many others nearly as large. In this house were over 100 fine plants of *Aerides* of sorts; a splendid plant of *Oncidium Lanceanum*, in bloom; a plant of *Dendrobium album sanguineum* in fine bloom, and numerous other plants of this beautiful *Dendrobium* showing bloom; *D. eburneum* also very fine. There were over 50 plants of the fine white *D. formosum*, all in splendid condition. From this house we passed into the show-house, where the plants are generally placed when in bloom: amongst others we noticed some very fine varieties of *Phalœnopsis Schilleriana*, *Cattleya Loddigesii*, a fine pale mauve variety, with a large crested lip; *Dendrobium gratiotissimum*; a very fine variety of *Cypripedium villosum*; *Epidendron machrochilum album*; *Dendrobium Chresotoxum*, which is after the style of *D. densiflorum*; *D. formosum aureum flavum*, a very pretty variety; *Lælia Lindleyana*, white, with purple blotches. From the show-house we enter the *Cattleya* house, where of *Cattleya elegans* we count 70 plants; of *C. Leopoldii*, 40 plants; here we saw *C. exoniensis*, the finest of Domyny's seedlings, a grand variety, as is *C. labiata Dawsonii*, named after Mr Dawson; of *Lælia purpurata* we saw 50 large plants; 40 plants of *Cattleya Acklandii*, 100 of *C. Mossiæ*, 40 of *C. Loddigesii*, and all the other leading varieties in like proportions. A horticultural friend who was with us counted in this house, on the 2d of July 1866, 420 fully-expanded blooms of *Cattleya Mossiæ*, and 212 of *Lælia purpurata*. Our readers will gather from this some idea of the scale on which Orchids are grown at Meadow Bank.

In what may be called the Orchid conservatory, a span-roofed house about 80 feet long and 24 feet wide, we saw a grand plant of *Odontoglossum pescatorei*, with six spikes of bloom and 300 fully-expanded flowers. This grand Orchid continues in bloom for three months. Of *Lycaste Skinnerii* there were hundreds in full bloom, and scarcely two of them of the same variety: one very fine variety struck us as being worthy of a special name. There was a remarkable plant of *Odontoglossum grande giganteum*, with fifteen expanded blooms of enormous size, and an *Oncidium incurvum* also of great size, having white flowers with dark spots; a plant of *Anguloa Clowesii* 3 feet across—this plant had seventy blooms on it last year; *Oncidium leuchochilum*, with a flower-spike 12 feet long; and an *O. excavatum* 6 feet across. These were all growing, and that to the greatest perfection, in greenhouse temperature. There were *Camellias* in bloom in the same house. In the *Amaryllis* house we saw several fine seedlings in bloom, and noted that the following

named varieties are of first-rate excellence: *A. Cleopatra*, *A. acremanea pulcherrima*, *A. Purdiana*, *A. Diadem*, and *A. Johnsonii* major. In the *Phalænopsis* and *Saccolabium* house we saw twelve plants of *Aerodes Lobii*, and several plants of the Borneo variety of *Phalænopsis grandiflora*, by far the finest variety of this plant; *Cypripedium concolor*, a curious variety; and fine plants of *Saccolabium ampullaceum*, *S. curviflorum*, *Aerodes quinquevulnera*, *A. Schroderii*, with five breaks and 2 feet high—this plant is worth £80. In the cool *Odontoglossum* house, 60 plants of *Epidendron vitellinum*, *Oncidium cordatum*, with twenty-five spikes; this is a scarce plant, and is worth £100 to break down. *O. hastilybium*, with bulbs 4 inches by 6 inches; *O. Servantesii*, a plant with pretty mottled flowers, and a plant of the true *O. triumphans*, a very fine variety. There were scores of *O. Bluntii*, *O. radiatum*, and of *Trichopilia suavis*, and dozens of *Sophranitis*. In the Convalescent house, where newly imported plants are placed for a time, *Odontoglossum coronarium*, *O. Cervantesii*, *O. maculatum*, *O. Alexandra*, a fine variety, *O. nebolosum*, also fine. Here were also a dozen plants of that most lovely Orchid, *Lælia majalis*, growing on square earthenware tiles, and hanging over store-plants of bedding *Geraniums*, where the temperature frequently fell to 32° during the winter, yet these plants were in perfect health. In this same house we noticed *Oncidium cucullatum*, a very beautiful variety, the flowers coloured maroon and violet. There were also *Barkerias* on blocks of wood by the dozen. In the Mexican house we noticed a grand new variety of *Cattleya labiata*, recently imported by Mr Low, flowered for the first time at Meadow Bank, and named after Mr Low. The flower is 8 inches across, the colour amethyst, mottled with white, the lip a beautiful mottled crimson, certainly the grandest variety we have seen of this very showy Orchid. It was imported from Venezuela. There were also sixty plants of *C. Dowiana*, discovered by Captain Dow at Costa Rica. It is the most distinct and beautiful of its class, cinnamon colour, with fine purple lip. But we must bring these Notes to a close, having presented our readers with evidence that Mr Dawson cultivates Orchids on a grand scale. Plants of which few purchase more than a single individual, he purchases by the dozen at one time. Nor let it be supposed that he is making a bad investment; for we think it probable that, in addition to the pleasure his collection must afford him, he could at any time get what it has cost him for it. Some of our readers will be startled when we tell them that we think it quite possible his collection would realise £15,000 if brought to the hammer, and that such a sale would bring purchasers from all parts of Europe and America; but we wish them no such fate: we hope they may long

remain the property of their present munificent patron, and under the skilful management of Mr Anderson, for they do credit not only to their owner and cultivator, but to the nation.



NEW PLANTS OF THE PAST MONTH.

A VERY useful dwarf-growing free-blooming *Rhododendron*, named *Multiflorum*, with white flowers, a seedling from *R. virgatum*, has been shown by Mr Davies, nurseryman, of Ormskirk, and received a second-class certificate of merit. It appears to be eminently adapted for cultivation in pots in the early spring; the little bush shown was a mass of white flowers. It was said to be hardier than *R. ciliatum*, and the flowers are larger than *R. virgatum*. I saw a duplicate plant at the spring show at Liverpool, and there the judges awarded it a first-class certificate. Messrs E. G. Henderson & Son have a good type of the Golden Archangel, which they have named *Lamium maculatum aureum*: it is somewhat early to judge of its merits, but it is said to be a capital bedding plant for summer work, and so, an excellent companion for their dwarf Golden Pyrethrum, Golden Feather, which has proved an excellent bedding plant. A curious Cyperaceous plant, named *Cyperus Lacouri*, a dwarf plant with deep green grass-like foliage and numberless heads of pure white flowers, from the same exhibitors, has received a second-class certificate. It is somewhat doubtful if it is a *Cyperus*, though regarding its value there can scarcely be two opinions. It will prove an excellent thing from which to cut for bouquets. Its proper name is *Kyllingia monocephala*.

Mr B. S. Williams received a second-class certificate for an *Oncidium* species from New Grenada, a supposed variety of *O. obryzatum*, the which it has subsequently been named. It produces a long and showy spike of flowers spotted with brown. The magnificent new *Oncidium macranthum*, variety *hastiferum*, has again been shown in fine condition, in this instance by Messrs Veitch & Son, the plant having eleven expanded flowers. It is truly a regal variety. The same firm has a handsome form of an *Anguloa*, supposed to be an entirely new species. It is to be again produced for further consideration. Two specimen Orchids have recently been shown by this firm that were marvels of fine culture; the one, *Cymbidium eburneum*, with more than fifty flowers; the other, *Angræcum citratum*, to both of which special certificates were awarded. *Oncidium Kramerianum*, from J. Day, Esq., Tottenham, also received a first-class certificate. It is an introduction from New Grenada, and had one terminal blossom at the point of the

spike, which greatly resembled *O. papilio pictum*. A spike-stem will produce flowers for several years in succession.

New Azaleas are sure to put in appearance at this season of the year, though as yet nothing first-class has been seen. Mr B. S. Williams has *A. Souvenir de Leon Meinhaut*, a large bright violet-rose coloured flower, but wanting form; and *Princess Helena*, pale rosy salmon, spotted with bright crimson on the upper petals; a very pretty shade of colour, but the flowers crumpled on the edges. *A. hybrida odorata* came from Mr Davies of Ormskirk. It has pale coloured flowers on a plant of the Ghent Azalea habit. It resulted in a supposed cross between a Ghent variety and *Rhododendron ciliatum*, or something like it. Mr Squibb, The Gardens, Rocknest, Godstone, had two seedlings from *A. Blanche* and *A. Flower of Spring*—one pure white, slightly flaked with scarlet, the other pure white, but not improvements on existing kinds. Mr F. R. Kinghorn has shown some cut blooms of his new variety of last year, *A. Lizzie*, the flowers white, flaked with rosy carmine, and of very fine form. It promises to be a capital exhibition kind.

Mr Tanton of the Epsom Nursery has just shown a flowering plant of a supposed *Gesneria* species, but which is fancied to be a variety of *G. bulbosa*. It has large deep scarlet flowers and long woolly bright green leaves. It came from South America. *Amaryllis Othello*, from C. Kaiser, Esq., Broxbourne, is a seedling, it is thought, from *A. pulcherrima*, raised by Mr E. Baxter, the gardener. It is of a rich deep crimson hue, shaded with dark; very showy and striking; and was awarded a first-class certificate.

Mr Turner of Slough has again produced some more of the fine new forms of the Alpine Auricula which he has been so successful in raising. Year by year the Auricula is becoming less and less an exhibition flower merely, and will have to accept the issue to which all florists' flowers are more or less becoming subject—their value as decorative plants. Here the Alpine varieties have a most marked advantage over those solemn-looking powdered courtiers among flowers, the grey, green, and white edged Auriculas. The Alpine varieties have large, bold, showy, and even striking flowers; and being much more hardy, as well as much more easily managed, than the "show" flowers, as they are termed, they will certainly become more popular. *King of Crimson*s and *Princess*, two rich dark flowers—the former crimson, the latter dark purple grounds, with conspicuous yellow centres—received first-class certificates; and *Jessie*, a dark-ground flower margined with purple and rich yellow paste, received a second-class certificate. In addition, Mr Turner had *Constellation*, *Minnie*, *Admiration*, *Landseer*, *Sovereign*, *Dazzle*, *Brilliant Meteor*, *Sparkler*, *Selina*, and *Seraph*,

all beautiful flowers, every one of which is well worthy cultivation. Colonel Champneys, a fine grey-edged show flower, and Competitor, an immense green-edged flower, were also awarded second-class certificates.

Of new Hyacinths there have been many examples presented this season. As we are dependent on foreign raisers for these, it often happens that with but rare exceptions the new flowers are never in advance of existing kinds. King of the Yellows (W. Paul) is one of the very best, a fine deep-coloured, single, yellow flower, forming a good close spike. This was awarded a first-class certificate. Prince Albert (Cutbush) is a rare addition to the Double-Blue class. It is something in the way of Laurent Coster, but of a deeper colour; the bells are of fine shape, and the spike close and good. Autocrat (W. Paul) is a mauve-coloured single variety of a somewhat deep hue, and forms a good spike. Clio (W. Paul) is a bright lavender-blue flower with a white centre, in the way of Lord Palmerston, but better; the spike small as shown, nevertheless a cheerful-looking flower. Grand Monarque and Couronne des Bleus, both from Mr W. Paul, are large-belled, single, pale-blue varieties, in the way of Grand Lilas, but neither form such a massive or symmetrical spike of flowers. The last four named were awarded first-class certificates. Prince Alfred (Cutbush) is a deep rose-coloured single variety, in the way of Von Schiller, but livelier in appearance, and altogether a pleasing flower. There were several others produced at the London shows, but all more or less of but mediocre merit. The Liverpool Hyacinth exhibitors in the Nurserymen's Class, who can grow quite as well as the exhibitors round London, also import new kinds quite as freely as Messrs Paul and Cutbush. The best new kinds at Liverpool were Marge, a single variety, with pale greyish-blue flowers, the bells very large, stout, and well formed, and forming a handsome and commanding spike. Michael Angelo is an improved Madame Van der Hoop, a fine single white variety, somewhat difficult to catch good, but when good really first-class. Agnes Sorrel and Orange Boven appear to be two varieties raised from that novel Hyacinth, Duc de Malakoff, a flower claimed for both the single red and yellow classes, but actually belonging exclusively to neither. Both have more red in them than Duc de Malakoff; they are also both pretty and novel, and form good spikes.

Some very pretty things have appeared among the newer forms of the early-flowering Tulips, but these must be held in reserve for the present.

R. D.



CLAY MANAGEMENT.

A FEW weeks ago, I had the pleasure of conversing with a gentleman from St Petersburg, who is connected with the British Embassy in that city, and who has been resident there some years. I had many questions to ask him on the horticulture of the country, among others on the effect of the severe frosts on plants and on the soil. An illustration of the effect of extreme frost on soil exposed to it is found in the answer to the question, Why the streets of St Petersburg are not paved? which is simply because every stone would be hoven up some 18 inches out of its place by the force of the frost: the site of St Petersburg being naturally wet—a reclaimed bog, in fact—the soil rises under the influence of frost like a baker's batch. The pavement would be one mass of confusion in the spring, and would have to be paved afresh every summer; hence the ruts and holes in the grandest streets of that city.

The simple phenomenon of the rapid and great expansive force of water while freezing is of incalculable importance to the cultivator of heavy clay soil, when fully taken advantage of. The absence of nature's assistance in this respect during the past mild winter has been to us the cause of much extra labour in smashing and pulverising the soil for cropping—work which a few nights' frost would have done infinitely better. The ridges of moist clay set up in winter looked like rows of bricks in March; how we longed for one night of the St Petersburg smasher, and to see it crumbling down in the sun next day like lumps of quicklime in process of slaking!

The cultivators of heavy clay have their chief assistant in the winter frosts, when they are properly taken advantage of; yet it is usual to see the farmer of these parts turning in his teams, and treading and ploughing up his soft land intended for turnips and potatoes in the months of March and April, to be converted into bricks in the sun; reminding one of the sun-dried bricks of the Israelites, with just a little stubble intermixed; but, unlike the Egyptian bricks, to be turned over and smashed up again, rolled and retrodden. No wonder the turnip plant refuses to grow in such conglomerate, and becomes a prey to fly. In the garden there are various means which can be adopted to supplement the effects of frost in the amelioration of a clay soil, some of which we shall review, and then recount some of the plans necessity compels us to adopt in the management of certain crops. Like all good (!) cultivators, we must first mention drainage—important certainly, but the subject has become stale, this thorough drainage. No gardener, at least, requires nowadays to be told to drain his land or his pots well. This much we shall say, however, that as regards heavy close clay, we are convinced that all ordinary drains are better to

be not more than 3 feet deep, even less, then break up the land 2 or 2½ feet deep. Under the influence of heavy rains, clay soon becomes impervious to water, even with no treading or pressure but its own weight: it becomes "sad," as our workmen phrase it, and a deep drain is useless. To accomplish perfect drainage in a very stiff quarter, on which the water used to stand in pools for weeks after rain even with a sufficient number of 3-foot drains in it, we had it trenched 2 feet deep, and put in a layer of ashes 2 inches thick in the bottom as the work proceeded, which has had the most beneficial effect.

Next in importance to drainage and trenching for the improvement of clay, would no doubt be the burning of the bottom spit to the depth of a foot or so, as was recommended and practised by Mr D. Thomson many years ago; but we have never been able to face the difficulties of labour and the materials for fire, in the shape of wood or coals. But where burning can be executed effectually, certainly no improvement could be more permanent and satisfactory than this on a refractory clay. Lime has a powerful mechanical effect on heavy clay, seeming to loosen its texture out of proportion to the quantity of lime used. But although clay will stand very heavy doses of lime without any bad effect on the crop, yet there is a limit to the use of lime when used only for mechanical effect; that is, we must not be tempted to overdose for that result only. It is best put on after the ridges have been broken down in the spring. Drills may then be opened for seeds at once, or plants inserted. We have used river-sand to lighten clay in quantity, but it is amazing the amount of sand a clay soil will absorb without any appreciable effect on its texture. It is therefore not much in favour with us, except sometimes as a top-dressing to facilitate the cleaning of borders, or any particular part under the eye. In wet weather it is usually tough work to Dutch-hoe and rake a stiff clay, but a top-dressing of sand slightly intermixed with the surface facilitates the work very much, and makes a much neater finish under the rake. Fine coal-ashes, dashed through a ½-inch screen, and used as a top-dressing, or spread on the land in the autumn, and worked in at the winter ridging, is an excellent loosener of clay. It has a much greater bulk in proportion to its weight than sand, and, moreover, has a certain amount of fertilising properties. We husband every barrow-load of well-burned ashes. Fine charcoal has the same effect, as indeed any charred material, as burned clay, excepting soot, which, however excellent as a top-dressing, does not by any means improve texture. Trenching, annual ridging, and plenty of manure, such as leaf-soil, grass, or stable-dung, which bulks well, are, after all, the best improvers of a kitchen-garden clay, short of actual burning.

THE SQUIRE'S GARDENER.

STRAWBERRIES—"BLIND."

THE failure of Strawberries when forced early is of too frequent occurrence to require any detailed description of what is technically termed "running blind;" this we generally attribute to want of sun and air. We believe there are other causes which deserve more attention from gardeners. It is observable that "blindness" occurs when there is no intelligible cause in vigour of the plants or the treatment they receive. A very notable case happened with a new variety of Strawberry in my own charge a few years ago, which awakened my attention to inquire further into the subject, and seek for the opinions of distinguished cultivators. I did not find, however, that the point I sought to learn had been taken into consideration by my correspondents. I then thought the sexual organs were at fault, and observations since have confirmed the opinion I had formed of the dioecious character of the Strawberry.

This subject is brought fresh to mind by a letter from a good practical gardener detailing the great loss of his Strawberry plants (which I had seen in autumn very promising) by "going blind." This subject merits the attention of the able contributors to the 'Gardener;' we want to know whether "blindness" is purely attributable to weakness in the plants; or may it arise from the partial absence of one or other of the sexual organs?

A very intelligent writer asserts, there is no Strawberry which produces abundantly and large fruit when the male and female organs are perfect, and in *the same blossom*. In some varieties only, it amounts to a complete separation of the sexes; in others, those abounding in the female organs never produce perfect fruit: those which abound in the male organs sometimes bear a fair crop, and where a few only are perfected, they are often of a large size. It is of small importance, in open-air culture, when there occurs a partial failure of Strawberries from causes that cannot be foreseen. In forcing Strawberries, it is a very important matter to have a full crop, and there a standard importance belongs to a full knowledge of the causes of "blindness."

The season has now come for observing on the largest scale what importance is to be attached to the *full* fruit-bearing of the Strawberry in relation to its dioecious character. CHAS. M'DONALD.



THE POLYANTHUS.

To say that early spring flowers are in the ascendancy, is just what we may expect at this early season of the year ; but to say that men of science, taste, and judgment are going back to the original species in order to raise new varieties of *Primula*, staggers our faith in its utility, when we have such beautiful specimens handed down to us by florists of equal taste and judgment—ay, and science too in their floral experiments.

A glance at such flowers as Hufton's Lord Lincoln, Saunders's Cheshire Favourite, or Adis's Kingfisher, will not fail to convince any admirer of "nature's sweetest smiles" that such are the flowers from which the experimentalist may expect to raise by careful crossing improved varieties of this early spring flower.

I don't know that I can advance anything new, merely lessons that I have learned partly from experience and partly from other growers ; yet I feel assured that any one following the simple directions I shall give will become a successful cultivator, and to this end the following particulars are essential. First, a suitable aspect. The north or east of a wall or fence or temporary shade, where they will get only the morning sun, is the aspect most favourable for their well-doing. Second, suitable soil :—good loam from a field that will grow good wheat, well sweetened by exposure to frost, sun, and air, or good turfy loam well mixed with one-third of either two-year-old well-rotted cow or horse dung, well sweetened by exposure and frequent turning over : about 9 inches deep of such soil will grow the *Polyanthus* healthily and well. But the great secret of success lies in deep planting. In making the hole ready for the reception of the plant (which ought to have its roots washed and examined to see that they are all healthy and vigorous, and any decaying parts removed), raise it up in the centre in form of a cone, spread out the roots around it, gather the foliage erect, and fill up to about 1 inch above the collar of the plant. The advantage derived from deep planting is, that the best rootlets growing from the top part of the tap-root derive more nourishment from the soil, and are more secure from drought in summer and frosts in winter. It is also necessary that they should have regular attention by frequent stirring, topdressing with fresh soil, watering when necessary ; and as soon as the truss makes its appearance, cover it over with a square of glass firmly fixed in a short stake ; this will be a sufficient protection, to keep off wet and some insects which injure the bloom. These simple attentions will insure a bloom which might prove a gratification to the most fastidious florist.

DERA.

HINTS FOR AMATEURS.—MAY.

THE principal vegetable crops will now be showing themselves ; and to insure success with them much will now require to be done. As soon as the hoe can be used between the rows, a stirring through every surface should be given, destroying weeds before they become established (which is a great saving of labour, as well as preventing them from choking up the young crops). If the rows are not seen very clearly, it may be well to place the line down and keep an inch or two off it, lifting and placing it to every row. If weeds are large enough, they may be pulled out of the rows, and thus cleaning them will mark the lines. Nearly every crop requires thinning to some extent, the richness or poverty of the ground being the best guide as to distance apart. When thinning is neglected, the produce is very inferior. This applies more especially to Onions, Parsley, Carrots, Turnips, Beet, Parsnips, and Lettuce. Onions we generally leave from 4 to 8 inches in the rows. Some kinds grow larger than others. Great care must be used not to loosen the crop when the thinnings are taken up, and leave the most vigorous. Parsley left about 8 inches apart will give fine large leaves. Carrots, for main crop, may be from 8 inches to a foot apart, but the Shorthorns can be left rather close for drawing young, and successions sown regularly throughout the season. As soon as carrots are thinned, we find it an excellent system, where grubs, &c., are troublesome, to place a good mulching between the rows. The mowings of grass answers well for this. Turnips to draw young may be left 6 or 8 inches apart, and those to stand throughout the season will require a foot between them. Beet treated the same as Turnips will do well. Parsnips require a foot between the plants in the rows ; but to have the roots three feet long, $1\frac{1}{2}$ feet between each is not too much. Lettuce may be thinned out to a foot each way, and the thinnings planted in a shady position to give a succession. Sow more Broccoli, such as Walcheren and Cape. Osborn's White is said to come in late in fine condition if sown in May, and even as late as June in early localities. Sow Scotch Kale, Savoy, and Cabbage, if required for planting thickly, where crops of Potatoes, &c., have been cleared off. This practice will keep the ground under crop, leaving no space idle. Sow Broad Windsor Beans for a late crop, and top any which are 2 feet high and coming into flower. Veitch's Perfection, British Queen, and Ne plus ultra Peas may be sown any time this month ; they do well for second last crops. Early kinds are generally preferred for latest sowings. They come in quickly, and at the late season are not liable to turn "old and tough" so quickly as when bearing in the hot season. All Peas requiring

stakes should be attended to before the stems bend and fall over. Stakes generally require to be much longer than the height of the Peas as given in catalogues. All kinds of Salads, such as Radishes, Mustard, Cress, Onions, for drawing young, Lettuce, &c., may be sown at short intervals on cool soil to keep up a regular supply. Beet for the main crop may now be sown; it does best on ground which has not been lately manured. Silver-skinned Onions should now be sown on hard poor ground to keep them small for pickling. Spinach should be sown often in small quantities in cool ground between other crops, or among fruit-bushes: it soon runs to seed and becomes useless: rich deep ground gives large tender leaves. White and Red Stone Turnips are good kinds to sow now for a main crop. French Beans and Scarlet Runners may soon be sown for main crops; any which have been sown in sheltered positions will require protection till frost is past. Scarlet Runners are useful for shutting out anything unsightly in gardens. They require strong high stakes. They also make good edgings for brakes; if pinched in regularly and the Beans taken off before they become old, they will continue to bear throughout the season; good ground and moisture at the roots are necessary to keep this excellent vegetable in full bearing. Celery ridges may be made by cutting them out with the line about 1 foot or 15 inches wide, throwing the soil right and left, then filling up the trench (which may be a foot to 15 inches deep) with thoroughly decayed manure, the richer the better, sprinkling a little fine soil over the top and bringing the surface within a few inches of top of ridges: this is for single rows of manure, which may be 4 feet apart, and the plants may stand 8 inches to a foot apart in the rows; ridges for three or four rows may be made in the same way, keeping them wider; we find the latter the most economical of the two systems. Crops of Lettuce, Turnips, Spinach, &c., may be grown on the tops of the ridges. Celery may be pricked out for main and late crops as formerly directed. Broccoli, Brussels Sprouts, Kale, Savoy, &c., may be planted out when strong enough; short sturdy plants which are secured by early pricking out are by far the most serviceable. Draw drills for the plants, as for Peas, 2 feet apart, and plant them as much between each in the rows. Less space than this does very well on poor sandy soil, or when they are planted late in the season. (Early Ulm Savoy and some of the smaller Cabbage are wide enough at 1 foot to 15 inches each way.) We prefer planting the most of these, especially Broccoli, on firm soil; they are less liable to "clubbing" and other evils which attend them. We have by far our best Broccoli at present from a brake which was cropped with Spinach last year, the ground only being cleared, and the young Broccoli planted in

the hard soil with the aid of an iron rod and a mallet. The kinds are Carter's Champion, Knight's Protecting, and Osborn's White. Not a single plant failed ; they are large, and the heads close to the ground on sturdy stems. Tomatoes and Chilies may be turned out in pits filled with good soil, at the bottoms of walls, or sloping ridges covered with slates. The Tomatoes can be trained up them as they grow, but Chilies require the aid of glass in cold northern districts. Ridges for Cucumbers and Gherkins may soon be made, and the plants got ready by exposing to air freely on every favourable opportunity. To make good ridges, the soil may be dug out 2 feet deep, and 2 feet wide, and good sweetened manure placed in, shaking it well up, and beating it firm, then covered over with the soil about 1 foot deep, placing good soil for the plants every 3 feet apart for Cucumbers ; and 6 feet will be close enough for the spreading kinds of Vegetable Marrows. On the hills of good soil place handlights, and in each two plants to be trained over the surface of the ground as they grow. Shading is required till the plants make a start, then air is increased by raising the handlights as the plants become strong. In the south of England great quantities of these are grown without the aid of artificial heat, and only by making round holes in very solid ground, placing in good soil, and planting Vegetable Marrows or Cucumbers on top. Hot-beds will require frequent attention with linings to keep up a regular heat, and add earth as the roots find their way through the soil in which they have been planted. It is an old and useful practice to use old Mushroom dung with the "earthings" to Cucumbers, Vegetable Marrows, &c., as fine crops of Mushrooms often appear in autumn, but perhaps more frequently on the ridges.

Fruit-trees of every kind will now require looking over to regulate the wood for next season's supply. All shoots growing straight out from the walls should be cut off clean, those taking the lead pinched back, to allow those which are weakly to gain strength. Those growing in one another's way to be thinned, and those left tied in neatly. Thinning of fruit should be done very gradually, as much of it may drop off. A good syringing will be useful in clearing off insects and dust, but this had better be done in the morning only, till nights become warmer. Standard trees and bushes, where time allows, will be greatly benefited if treated in the same way. Those which may have been very late planted, may be greatly benefited by a good watering overhead and at roots, especially if mulching has been scanty, and the weather very dry.

The planting out of flowering plants for decorating the borders and beds will soon require attention. About the 20th is a safe time to begin this work. Little early growth is made if the plants are placed in cold damp soil. In damp late localities many of the more tender

things are benefited when a handful of light rich soil is placed about the roots at planting-time. Let each ball of earth be tolerably moist when planted out. If the balls are turned out of the pots very dry and hard, stunted growth and little succession of growth will be the result. Give plenty of room to large-growing things, especially if the ground is very rich (when such is the case more leaves than flowers will be given). After all plants are turned out, a good open surface should be kept to keep out drought, and watering at the root only used as a necessary evil, which cools the ground, and is of not much benefit to the plants. When water is given (except overhead to refresh and clean the plants), a good soaking, to moisten all the soil, should be given; and as soon as the surface is dry use the hoe freely to keep the soil open. Auriculas in pots going out of flower require to have the seed-pods kept off (except seed is to be saved), the surfaces to be kept clean, and the plants freely exposed, but not allowing them to suffer for want of water. Seed may now be sown where it can be protected. Light sandy loam and leaf-mould will suit the seedlings. Tulips coming into flower may be shaded to keep their flowers bright. Plenty of air must be allowed to pass among them. Cold winds should be broken by some kind of protection. Carnations, Picotees, &c., will soon require staking. Those in pots should be kept on a hard surface, and vermin kept out of the pots. Give them abundance of air and plenty of weak liquid manure when they throw up their flower-stems. Dahlias and Hollyhocks may be planted out soon, using good rich loam with them. Dahlias may have their permanent stakes placed in their positions, and the plants put beside them, tying them up as they grow. Flower-pots or some other protection should be placed over them at night till all danger of frost is past. Stocks, Asters, and all plants which have been raised under protection for planting out, should soon be fit to be placed in their flowering quarters. They may be planted to stand 8 inches or a foot apart, allowing for many Stocks to come single. All plants in frames and greenhouses should now have plenty of water, allowing none to become sodden. Shift to larger size of pots as the roots appear through the soil. Manure-water may be given to Fuchsias, Geraniums, and other flowering plants that cannot have larger pots. Pinch the tops out of Chrysanthemums to keep the plants bushy. If the tops of large plants are layered in small pots, they will be useful small flowering plants. Give all growing plants plenty of room, keeping the surfaces of their pots clean and well stirred. Balsams require plenty of pot-room and the flowers kept off when large plants are wanted. They require very rich soil, a little bottom-heat, plenty of air, but not exposed to cutting winds. When flowering, they do well in an ordinary greenhouse. M. T.

ON MUSHROOMS.

It is a matter of no small annoyance and disappointment to the gardener, to find the fruits of his labour and care throughout the summer and autumn destroyed in one or two nights, as has been the case with myself and several of my friends and acquaintances. Being expected to keep up a supply of vegetables throughout the year, and as Broccoli is one of the favourite dishes, I set my heart and my hand on making an unusually grand display this year. Great pains were taken in sowing, pricking out, trenching the ground, &c., and up to the new-year the result was all that could be expected. But how do they look now? Like a mass of jelly. The same remark applies to Savoys and Brussels Sprouts. The only thing remaining in the shape of a vegetable are German Greens. Such being the case, the only resource to fall back upon is forced vegetables; and a good bed of Mushrooms, where, like the hospitable old gentleman's cupboard, "you can cut and come again," is by no means to be despised. As I am fortunate enough to possess such a bed, it has occurred to me that a few practical hints on the culture of Mushrooms might not prove unacceptable to some of your numerous readers.

The first thing that demands attention is to procure a good quantity of fresh horse-droppings; these I regularly obtain from the stables every morning. They are spread out in a dry open shed, and frequently turned over to dry and to prevent heating. I manage to get enough together to make a good large bed towards the latter end of September. This bed comes into bearing in December, and keeps up a good supply till March. The next bed is made about Christmas, which comes in when the other bed is getting exhausted, and lasts till May.

In order to meet with good success, it is necessary to get the dung into good condition—i.e., neither too wet nor too dry—so as to keep up a nice gentle bottom-heat. This being obtained, the next point is how and where to make the bed. Mushrooms will spring up anywhere, where they can be kept dark, and where a moist temperature of about 50° can be maintained; unless this can be done, I have no great faith in the result. In any establishment where Mushroom-growing is a desideratum, especially in winter, there ought to be a house properly constructed, and heated for the purpose. I know that some people pretend to grow them in the potting-sheds, &c. But these must be different from some where I have stood for whole days together, when I could hardly feel whether I had any fingers or toes. In such a temperature I would undertake to count as many fingers as there would be Mushrooms.

But granting that there is a proper place, the next point is how to make the bed. The first one I make on the floor of the house, and about 30 feet long by 5 feet wide. A layer of dung 5 or 6 inches is laid regularly all over, then beat down hard with a heavy wooden beater. The same with another layer, and another, till it gets from 12 to 18 inches deep. The latter depth I prefer for bearing well through the winter. As soon as the bed is made I plunge a thermometer into it, to watch the heat, which will at first rise to 100° or 110°, from which it will gradually decline. As soon as it comes down to 80°, the bed should be spawned, which is done by making holes 9 inches apart and about 2 inches deep, large enough to admit a piece of spawn about the size of a hen's egg; then fill in the holes with the loose dung, and beat down hard as before. About ten days after this the bed should be covered with 1½ inches of good light turfy soil, neither too wet nor too dry, and beat down with the back of a smooth spade, to get an even surface. Little can be done now but to keep the temperature of the house as near 50° as possible. To prevent evaporation, the bed may be covered over with about 6 inches of dry clean hay for about six weeks or two months, at which time, if all has gone on right, Mushrooms ought to make their appearance. If the soil has been in good condition as to moisture, the covering of hay will maintain it, so that no watering is necessary until after the bed has yielded the first crop. But if otherwise, a good watering with warm tepid water should be given about ten days or a fortnight previous to the time that Mushrooms are expected. This should be particularly attended to, for if delayed too long, and the young Mushrooms are breaking the ground, at that stage they are very impatient of too much moisture in the soil, and the first crop will be lost. A nice moist atmosphere should always be maintained while they are growing, which improves their size and quality, and likewise accelerates their growth. As soon as the bed shows signs of exhaustion a good watering will set it agoing again. With this treatment I have had the first bed in bearing from the beginning of December up till now, the middle of February, and to every appearance it may yield another month yet. The second bed, which was spawned a week before Christmas, is now studded all over with young Mushrooms just breaking the ground.

Notwithstanding all the care and labour that may be expended in getting the manure in good condition, making the beds properly, and judicious attention afterwards, unless the spawn is good, no good crop can be expected. I obtain my spawn from Messrs Veitch of Chelsea, which always gives me great satisfaction. I say this without in any way wishing to interfere with the interests of other dealers in

the same commodity. But I firmly believe that a good deal of the failures attending on Mushroom-growing may be attributed to inferior spawn. But give me good spawn, and under the above treatment I would almost at any time insure a good crop of Mushrooms.

R. M.



FINE CAMELLIAS.

ONE of the most noticeable features of the great show at Ghent seems to have been the high culture of the Camellias on the occasion. This reminds us that when we visited Floors Castle on the 10th of last month, we saw six or seven Camellias there, growing in the border of a conservatory. On a double White we estimated that there were 1500 blooms expanded, and an equal number in bud ; on a plant of *C. Chandlerii*, 1000 expanded and many in bud, with a like number on a plant of *C. Imbricata*. These plants formed cones about 15 feet through at the base, and an equal height. They were all very shabby plants in pots ten years ago, when Mr Rose planted them in a newly prepared border. Now they are everything the eye can desire.



ANTHURIUM SCHERZERIANUM.

THIS plant may be reckoned among the finest of modern accessions to our stoves. It is a distinct and beautiful dwarf-growing species which, even in a small state, produces in great abundance its large scarlet flower-spathes, which last in good condition for three months. It appears to be a plant very easy to cultivate, growing and flowering freely in a shady part of an ordinary pine-stove. Indeed so useful and effective a plant does it appear to be, that it is worthy of being grown by the dozen where there is much demand for decorative stove-plants.

It grows freely in a mixture of sphagnum, peat, sand, and broken potsherds ; and although it makes nice flowering plants in 6-inch pots, it seems to like rather a liberal amount of pot-room, and an abundant supply of water. Treated thus it continues to make fresh leaves and flowers for a long time without any rest. It is a plant which can scarcely be too strongly recommended.

D. THOMSON.

FRENCH AND ENGLISH GARDENING.

HAVING been informed that Mr Robinson has taken exception to some of the expressions used by one of our correspondents in the March number of the 'Gardener,' we beg to state that, in replying to Mr Robinson's charge against British gardeners, our correspondent wrote that letter under feelings of much irritation, and used terms which we now regret to have published. When our correspondent applied the term "Tyro" to Mr Robinson, he used it relatively, and not absolutely, and meant that he was so in comparison with many of those against whom he directed his charge; and we intend the same explanation to apply to the other statements in regard to Mr Robinson, which we beg to withdraw and apologise for.



A FEW WORDS ON PRUNING ROSES.

[The following remarks on the pruning of Roses, which appeared in the 'Gardeners' Magazine' for March, appear to us so valuable, that we take the liberty of transferring them to our pages.—ED.]

THERE are so many conflicting opinions as to the principles upon which Roses should be pruned, that it is scarcely possible to lay down authoritatively more than the general canon, "that the operation must be regulated by the object of the grower, subject to the characteristics and habit of the variety brought under the knife." For instance, suppose it is desired to obtain blooms for exhibition at the end of June. In such a case a few leading shoots only will be required, and not too many buds developed upon them, as the number of blooms militates against individual size. The nature of the spring weather must also be taken into account; the milder the season the more rapid the growth, and the pruning therefore should take place later, or the plants will be in bloom before the period required. The middle of March will be quite early enough for the purpose. It should be borne in mind likewise, that Roses started too soon are especially liable to injury from the cold winds and morning frosts, if in too forward a state of growth, so prevalent in our climate at the end of spring. They are also more in danger from the depredations of that evil genius of rosarians, the black grub, whose attacks are always the most ravenous upon the early buds.

In selecting shoots for retention, those only which are firm and well-ripened should be kept. Such are not necessarily the stoutest, or the most temptingly succulent in appearance, the finest blooms of many kinds being borne upon slender twiggy wood. There is no fear of shortening too much, or thinning out too greatly, as it is surprising how large and outrageous a head will be produced from a few branches by the end of the season; though it must not be forgotten that too copious a pruning tends to encourage in vigorous kinds the production of wood at the expense of flowers. If Roses are desired to throw the greatest quantity of bloom possible, irrespective of exhibition properties, merely as ornaments of the garden, they need not be so copiously cut back or thinned. From either point of view, however, where a good stock of trees exists, it will be well to prune a portion at intervals of a fortnight, which plan will usually afford a succession of flowers, and the greater probability of having a supply of them when occasion requires. A sort of semi-pruning or shortening in autumn may often be applied to many kinds of Roses with advantage, with a view to the production of well-shaped trees, the finishing touches being deferred till the spring.

It is worthy of remark, in deciding upon the manner of pruning any given kind, that the finest blooms are produced upon the terminal shoots of maiden plants, and that, consequently, a good stock of such plants should be provided by those who intend to enter into competition for the honours of the exhibition stand; this is especially true of varieties cultivated upon the brier. Whatever other circumstances are taken into account in pruning Roses, they should always be cut to a healthy bloom-bud, which can be readily distinguished by an experienced eye. There is no gratification in seeing a fine shoot going away to mere wood, and, when such is perceived, it would be well to stop its career at once. Here is a valuable suggestion for our talented editor to descant upon, who, I verily believe, could prune Roses with his eyes shut almost, and in the middle of the night. That able rosarian William Paul lays it down as an axiom (and it is strictly true), that the more vigorous the habit, the more the shoots should be thinned out, and the less shortened those that are left.

The best method of dealing with newly-planted Manetti Roses requires a good deal of careful thought. The tendency to throw up suckers during the earlier stages of its growth, however carefully the eyes of the stock may have been taken out during its preparation, is always great. If it is desired, therefore, to make a good plant, the operation of pruning should always be directed to assist the grafted or budded scion to master the stock. How is this to be done? "Ay, there's the rub." If the effect of pruning be to excite growth, it would almost appear to be the most rational plan, for the first season, to do without the knife at all; for the greater the number of the branches, the greater demand upon them for vigorous supply of sap, which characterises the nature of that stock, and the less nourishment for the development of the aforesaid obnoxious suckers. In aid of the suppression of these disagreeable adjuncts, I am by no means sure that, for the first season, Roses on this stock should not be planted in poor rather than in rich soil.

It is an important point to bear in mind, while considering the manner in which Rose-trees should be pruned, that the operation acts as a sudden and decided check to the rising of the sap; this is a reason for not deferring it too long after growth has fairly commenced. In the summer also, when the shoots are full of sap, cuts have a tendency to bleed, through which an important branch often dies back, little by little, till it entirely perishes; this may be prevented by smearing the place over with grafting wax or clay.

To prune with anything like success, it is necessary to be provided with good implements—viz., a strong-backed sharp knife, a pair of pruning scissors for Roses, and a pair of thick gloves, "because of the thorns;" and for very old plants, the wood of which is extremely hard, a keen, small, double-edged saw. All kinds of dry and useless wood should be remorselessly cut out, and as smoothly finished off as trimming an obnoxious corn previous to wearing a pair of new boots.

For renovating an old Standard Rose-tree, there is no way preferable to that of root-pruning in the autumn, and in the spring cutting the head entirely down to the work as smooth as a knob of a walking-stick. A "favourable eruption" of eyes, numerous as those of Argus, will soon appear, of which all should be removed but a few of those most favourably placed.

The effect of pruning, in some degree, may be obtained by bending a shoot down and fixing it,—this is of use in forming umbrella-like or fountain-heads to Roses,—or it may be employed to fill up spaces.

W. D. PRIOR.

CLAPTON, 19th March.

GREAT INTERNATIONAL EXHIBITION AT GHENT.

ACCORDING to the reports of this great horticultural gathering in the 'Gardeners' Chronicle' and 'Journal of Horticulture,' it seems to have been a complete success in all respects. It took place on the 28th of March, and was kept open till the 5th of April. It was the fifth of a series that have been held once in five years. Amongst the largest contributors to it were, as might be expected, from their great resources and nearness to it, M. Louis Van Houtte and M. Ambrose Verschaffelt. The exhibition was held in the Hotel Casino, a fine building devoted to promenades and concerts, and in what is called the "Floral Hall" behind it. Here the plants were so disposed as to form a parterre, and not placed in stiff lines as is too generally the case with such exhibitions where less commodious buildings are available. There were 120 judges from France, England, Austria, Germany, and Russia, who were occupied a whole day in making the awards; for our readers must remember that on the Continent this is made a very formal and tedious affair compared with our own country. At the Great Exhibition in London in 1866, 99 judges made probably treble the awards in a fourth of the time. The whole of the Royal Family of Belgium came to Ghent for the occasion, and manifested the greatest interest in all the proceedings. The writer in the 'Journal of Horticulture' gives the following description of some of the finest plants:—

"To give some idea of the size of some of the plants sent, we just name that the Botanic Gardens, of which M. Van Hulle is the chief, contributed an extraordinary lot of fine plants. Some of these were 30 feet high; one grand Palm was 25 feet high and 30 feet through. M. Ambrose Verschaffelt contributed a vast collection, and was the winner of fifty-three gold and other medals. His superb collection contained a specimen of *Phœnicophorum sechellarum* 8 feet high, and with grand foliage; a *Thrinax elegans* 9 feet high; and a wonderful plant, *Cibotium regale*.

"Standing again on the balcony looking to the vast garden beneath, what a glorious sight it is! those grand banks of Azaleas resting amongst those stately Palms and giant Tree-ferns. Then there are huge banks of stove and greenhouse plants in bloom, many of them very much superior to what we expected to find, and a very marked improvement has taken place in their culture within a few years. Glorious Acacias of great size and beauty, huge tubs of *Calla Ethiopica*, each with about thirty blooms. Away in a westerly direction, edgings of lovely Lily of the Valley, and from well-grown *Mignonette* and *Heliotrope* rises refreshing fragrance. Those grand masses, what a brilliant combination of colours!—the free use of whites and softer colours toning down the more brilliant hues of others. Nearly every plant forms from half to two-thirds of a globe, on very short stems. There is no trace of the pyramidal form so generally adopted in England. Round about these are large banks of Camellias, and what plants they are! some 5 or 6 feet high, most symmetrical, and in admirable health, with rich green foliage and densely flowered. There is as wide a difference between the ordinary Camellias of English gardens generally, and these plants, as between Turner and Veitch's specimen Azaleas, and what are often sold by auction. The new and rare plants seem to have come chiefly from the establishments of Messrs Veitch of London, Linden of Brussels, A. Verschaffelt and J. Verschaffelt, though many others contributed to this feature. Amongst these A. Verschaffelt sent *Dioscarea nobilis*, with rich velvety foliage dusted with lemon-spots, with a large broad irregular lemon stripe in the centre of each leaf;

Cordylina Guilfoylei, which is a variegated *Dracæna* with pale yellowish white and green leaves; these were considered two valuable plants. M. Linden had a very interesting group, amongst them *Iresine*, sp. nova, a narrow-leaved kind with beetroot-coloured foliage and bright red midrib. Messrs Veitch & Son had some fine new *Dracænas* named respectively *Dennisoni*, *Chelsoni*, *Moorei*, and *Gibsoni*, the latter a very richly coloured variety, and a great many other new and rare plants for which their establishment is well known. The same may be said of Messrs Van Houtte, Jacob Makoy, and Jean Verschaffelt." Space, however, forbids that we should give farther details of this fine exhibition, remarking that the next takes place in 1873.



**SPRING EXHIBITION OF THE ROYAL CALEDONIAN
HORTICULTURAL SOCIETY, held in the Music Hall,
Edinburgh, April 1.**

THIS was probably the neatest exhibition we ever saw at the same season of the year; for while there were many remarkably fine examples of good cultivation, there was not a single subject but what was creditable to those exhibiting it. If we were asked to put our hand on the most remarkable example of good cultivation in the Hall, we would fix on two pyramidal plants of *Mignonetta*, grown by Mr Grieve, gardener to Mrs Blythe, Braeside. They far excelled anything of the sort we ever saw before, and to mark their sense of the merit of such cultivation, the Judges gave them a special award in addition to that offered in the schedule. The display of *Azaleas* and *Rhododendrons* was all that could be desired; but, as at the Glasgow Show held the week before, there was a lack of fine-foliaged plants to subdue the glare of brilliant colours. The *Hyacinths* were remarkably fine, and so were the spring bulbs generally; so much so, that an English nurseryman present at the dinner, declared that he had never seen such an exhibition at the same season of the year before, and he had been in the habit of attending flower-shows for forty years. We noticed a plant of *Rhododendron Falkonerii* in full bloom, exhibited by Mr Aiken, Mayfield House, Edinburgh: a sample of the fruit of *Eugenia Michellii*, resembling a wrinkled cherry, which may possibly be of service as a new dessert fruit; we regret that we cannot at present name the exhibitor. A very beautiful plant of *Camellia Wilderii*, of a pink colour, was exhibited by Mr Henderson, gardener, Milbank, Arniston. The original *C. Wilderii*, as most of our readers know, is white, but this plant is the result of a sport which Mr Henderson inarched on a fresh stock, and though now a large plant, it maintains its character.

Messrs Laird and Sinclair of Dundee showed a very early variety of *Rhubarb* which comes into use in the open ground fourteen days before any other. They had been selling it in Dundee at 2s. per stone, while no other except forced *Rhubarb* was in the market. Now that spring flower-gardening is once more attracting attention, we may notice a very pretty plant as a spring *Alpine* shown by Mr Methven, *Lachenalia tricolor*; it has a pretty flower and very pretty mottled leaf. The orchestra was furnished with palms and fine-foliaged plants by Messrs Lawson. Downie, Laird, & Laing, Mr Methven, Dickson & Co., Messrs Cartairs, and Messrs Drummond, all contributed, as they usually do, fine groups of forced flowers and ornamental foliaged plants. It is not a little creditable to this Society that it almost always brings forth the first forced fruits of the

season; both fine Grapes and Strawberries made their appearance at the late show. The Hall was thronged during the whole day, till 9 o'clock at night, by visitors. Altogether it was a very successful exhibition.

THE SATURDAY HALF-HOLIDAY:

ITS ADVANTAGES AND NON-ADVANTAGES.

MR EDITOR,—I do not for a moment purpose to enter fully into this subject, inasmuch as your editorial remarks anent G. M'D.'s letter are a sufficient guarantee to stamp the movement as not worthy of much consideration, and inasmuch also as it would be occupying valuable time and space.

The subject was discussed pretty freely through the medium of the 'Scottish Gardener' a few years ago, but was then treated, with one or two exceptions, in rather a one-sided way.

Permit me to say that I heartily agree with your views of the subject; and any brief remarks of mine will only corroborate your statements, and may tend to establish the fact of its non-importance.

In all my experience as a gardener I have as yet failed to see wherein lie the advantages to be gained through the adoption of the Saturday half-holiday system, either to masters or to men; and when placed in comparison with other arrangements for the benefit of under-gardeners, it has no chance of getting established—at least I hope not.

Gardeners, as a rule, have not the same plea, in many senses, to seek for a half-holiday, compared with the many disadvantages that tradesmen and mechanics have to contend with—viz., "close, dusty, confined workshops, stated hours of labour of equal duration summer and winter, broken time," which latter affects materially many an exchequer on pay-day. The gardener needs it not for an invigoration of health, nor has he to be at his work from six to six all the year round, nor yet has he to complain of broken time. The mechanic can throw aside his hammer and chisel immediately the hour for release strikes, and give not a thought to the work he has just left off until he returns on Monday morning. Not so with the gardener; there is not the same easy arrangement in connection with the cares which hang upon him from morning to night, and from night to morning. In all places of any extent there must of necessity be some one left in charge, and—unless in places of great extent, where a staff is set apart for house-work alone—there must also of necessity be men appointed to take charge in their turn, who have really no great experience in a forcing or plant establishment; and consequently the risk and responsibilities devolving upon a head-gardener are very great on these days. The foreman over that division suffers too, for many a blunder and neglect committed on a Sunday has to be contended with during the week. Hence, should we have the half-holiday system adopted, the risk and mismanagement would be magnified in proportion; and well does many a gardener know that, rather than increase his source of failure and disappointment, he had better turn his back upon his place altogether. The young gardener gives very little consideration to this side of the question; but once let him be placed in a responsible position, and he will find his shoes pinching in many places he never before dreamt of, and I venture to say that his ideas of a Saturday half-holiday will also melt away.

The foregoing remarks are chiefly in favour of masters and employers; let us now see what can be brought to bear upon the subject in favour of under-gardeners. They look forward to many advantages to be gained. True, to some it might prove a boon, who would embrace it for the purpose of botanising and study; and with the enthusiastic and persevering young gardener this is a very natural and substantial plea. Others look forward to the opportunities to be afforded to visit friends and relatives, &c. &c.; but this plea, I think, will not hold good. All are not within walking distance of home, and it is not at all likely that masters will afford their men time to return on the Monday, the more especially that they are to claim the half-holiday as their own, none daring to interfere. And many more seek it with the indirect purpose of facilitating the climax of their own ruin. It need not be stated that many gardens of considerable extent are placed in close proximity to large towns and villages, where young gardeners freely find amusements of not a very flattering type. In these dens, with their legion of vices, the Saturday half-holiday will afford three-fourths of young gardeners easy opportunities of involving themselves in inextricable ruin and disgrace. But I would not so strongly oppose the half-holiday system, did I not see a way through which young gardeners would derive more lasting advantage, and difficulties be avoided which would of necessity come in the way. And, in conclusion, I shall briefly state a system which I have adopted for a few years, against which I have never heard a dissenting voice, and, so far as I have been able to observe, to the entire satisfaction of the men. I make it a rule with myself (not with the men) to allow them a release of more or less a portion of every Saturday afternoon, just as I find the work on hand advanced, or can be conveniently left off. And, again, I make it another rule, if they are at all deserving, never to hinder or deny a man a day or two, either to visit neighbouring places or to pursue any other lawful motive they may have in view. This last arrangement is only instead of the better way of allowing each man a week's release during any time of the year most convenient for himself, the spring and planting-out seasons excepted.

A. M. C.

DUNDEE, *March 10, 1868.*

GOSSIP.

On the 10th of last month a number of the private friends and neighbour gardeners of Mr Rose gave him a farewell dinner in the Queen's Head Hotel, Kelso, in the prospect of his departure from amongst them to occupy the responsible situation of gardener to her Majesty at Frogmore. About forty of his friends were present on the occasion—the Rev. R. O. Broomfield, minister of Sprouston, in the chair, Mr Mein acting as croupier. It must have been highly gratifying to Mr Rose to see how thoroughly his honourable straightforward conduct during the ten years he has been gardener to his Grace the Duke of Roxburgh has been appreciated by all who have come in contact with him. During the evening the chairman presented Mr Rose with a very handsome gold watch and chain, and a purse of sovereigns; and what adds to the value of this gift is, that nothing more than the gift of the watch and appendages was contemplated in the first instance, and that from a few local friends; but as the matter became known, the circle of those who claimed a right to contribute became so wide that there was a large surplus. Another circumstance which must have been very pleasing to Mr Rose

was the presentation to him, by the men in the gardens at Floors, of a very handsome timepiece.

The Duke and Duchess of Roxburgh presented Mr and Mrs Rose, on their leaving Floors, with a handsome silver tea-service, in a beautifully fitted oak case, as a mark of their high respect for them.

Mr Rose is succeeded by one of his contemporaries in Dalkeith Gardens, Mr Knight, late gardener at the Chateau Pontchartrain, near Paris, where he distinguished himself by taking the highest awards made to any gardener at the Universal Exhibition last year. On relinquishing his situation in France his employers determined to obtain another English gardener as his successor, and we believe commissioned Messrs Lee of Hammersmith to obtain one—a very practical commentary this on the assertions of those who have attempted to glorify French gardeners at the expense of their English brethren.

We learn that Mr Taplin is succeeded in the management of the princely Gardens at Chatsworth by Mr Thomas Speed, for a number of years gardener to E. Walker, Esq., Berry Hill, near Mansfield; and if a successful past career is any guarantee of the future, we feel certain that the fame of the gardens at Chatsworth will not suffer in Mr Speed's hands.

We observe, by a circular sent us, that the National Tulip Society will hold their next exhibition at the Manchester Botanic Gardens, in conjunction with the Great National Horticultural Exhibition to be held there on the 29th of May. Altogether this meeting in Manchester bids fair to be one of the most interesting and important of the season. Mr Edmund Booth, Reddish, near Stockport, is the Secretary of the Tulip Society.



REVIEWS.

REPORTS ON THE PRUNING OF FOREST-TREES, AND ON HEDGEROW-TREES. By JOHN MORRISON, Coney Park Nursery, Stirling.

This pamphlet received the medium gold medal of the Highland and Agricultural Society of Scotland as the best essay on the subject of pruning forest-trees, and contains much that should be known to both the gardener and forester. We extract the following paragraph:—

“The mode of management now advocated is infinitely superior to that adopted by some, who make the indiscriminate pruning of the side-shoots or branches the object of their first attention, and proceed even to the extreme of divesting the tree of such to the extent of two-thirds of its height. They thus deprive the plants at once of lungs, clothing, and beauty, and leave only a mere armful of branches at the top. Such treatment is as unnatural as it would be for a shepherd to shear his sheep in the early winter, and leave them to starve during the inclemency of the ensuing season; and it would be as unreasonable to expect the flock to thrive in the one case as the trees in the other. Our object in pruning should be to assist Nature—not to cripple her in her operations, or deprive her of the means of existence. The naked bare-pole appearance of the trees subject to such treatment, contrasts most unfavourably with the light, airy, well-feathered, and robust look of those which have been wisely but not too severely pruned and thinned.”

THE GARDEN ORACLE AND FLORICULTURAL YEAR-BOOK FOR 1868. Edited by SHIRLEY HIBBERD, F.R.H.S. London: Groombridge & Sons, Paternoster Row.

In this little volume of 122 pages we have first an almanac and memorandum-book, then a judiciously written calendar of garden operations in every department for every month in the year, followed by a register and description of all the new plants that made their appearance during the year 1867, making up one of the most useful little books for the amateur or gardener that has come under our notice for a long time; and we advise all such to procure it, which they can do at small cost.



Notices to Correspondents.

THE GARDENS, PORTAFERRY, CO. DOWN, IRELAND.

DEAR SIR,—Having seen in number of January 1868 a recommendation of the Ecclelvalle Seedling Apple, I write you to say it was raised from a pip taken from an American Apple, raised by a gardener named Logan, at a place in this neighbourhood called Echlinville. The description given by the Squire's Gardener does not flatter it. It is one of the best baking Apples grown in our northern climate, and is well worthy a place in every garden. It generally takes the first prize at our shows in Newtownards and Downpatrick. If this description is of any use you can make it public.

A SUBSCRIBER.

DUNDEE, 19th February 1868.

DEAR SIR,—I send you names of a number of *spring* flowers which I was rather surprised not to see in your list in the 'Gardener'—viz., six varieties of *Helleborus*: *Orientalis*, fine tall white; *Viridis*, capital under trees; *Niger*; *Purpurascens*, very fine; *Lividus*, colour of flower like newly-melted lead, name doubtful; and another with whitish green flowers. *Sisyrinchium grandiflorum purpureum* and *album*, *Galanthus plicatus*, and *Leucojum vernum*. Do you know where I could get a copy or a sight of R. Thomson's (Chiawick) 'Comparative Trial of Peas' with synonyms?—I remain, dear sir, yours truly, C. G.

J. GILLEY.—We never met with the plant you inquire about, but we will endeavour to discover if it is in the country.

AMATEUR.—You say your Vines grew well for a time after they were planted, and now they flag when the sun shines. They are either dry at the root, or they are attacked by wire-worm. If the former is the cause you have an easy remedy; if the latter, stick wooden pins 6 inches long into bits of carrot or potato, and place them 4 inches in the soil, and pull them up every second day. If there are wire-worms in the border you will find numbers of them sticking in the carrots or potatoes. Continue this mode of catching them, and you will soon destroy them all.

YOUNG VINE-GROWER.—Get the tail of a rabbit, tie it on the end of a rod, and gently draw it over the surface of the bunches of your Gibraltar Grape when in bloom, having previously got the fur of the tail saturated with pollen from any other varieties that may be in bloom in the same or adjoining house. In this way you may make sure of setting any Grape known to us.

HAMILTON.—We have but recently begun using the manure you refer to, “Robinson’s concentrated and permanent Garden Manure.” Our experience does not enable us yet to speak of its permanence; but for French Beans, Strawberries, and such plants as we force early, we find it a safe and excellent manure. Open a case of it, and the smell will satisfy you that one of the most important elements for plant nourishment—ammonia—abounds in it.

VITIS.—What you say of your Vines is just what we would have expected after the dull dark cold summer of last year. That the wood of the Vine may be fruitful in our northern climate, sunlight is required fully as much as heat, and this the gardener has not at his command, nor should he be blamed for the results of the want of it.

SIR,—Among the Notices to Correspondents in the April number of the ‘Gardener’ I find some remarks asked for relative to the distance from the stem the lower branches of Conifers ought to be removed. The system adopted here with the few species which have been operated on, and to which no apparent injury has resulted, is generally carried out during the months of August, September, and October, and often as late as November. During these months we shorten the branches to within half an inch of the stem; but if practised during the spring or summer months, we leave fully 3 or 4 inches, and reduce to within half an inch of the stem on return of autumn. In no case should any species of Conifer have their lower branches cut quite close, nor can the stem-pruning system be practised with safety on all species.

J. M’N.



THE GARDENER.

JUNE 1868.



A GARDENER'S HOLIDAY IN 1868.

HOLIDAY THE FIRST—AT BELVOIR.



WHO is a gardener? What is a holiday?

The proprietor of a garden is no more, on that account, a gardener, than he who inherits an organ is a Mendelssohn or a Mozart. When it was remarked to a quaint old nobleman of my country that the trees in his park were looking remarkably well, "What of that?" he replied, "I am not aware that they've anything else to do;" and an infinity of others, neither quaint nor noble, appear to regard their trees, plants, and flowers, merely as ornamental furniture, and as having no more claim on their admiration than the walks of gravel, or the hurdles of iron, with which they are succinct.

Nor is he a gardener, consequently, who puts on an apron of baize, and takes wages in that capacity, any more than he is necessarily a sportsman who wears a red coat and buckskin breeches, but is only seen in proximity to the hounds when his horse takes the bit in his mouth, and his master into the midst of them. In this vocation, as in all others, there are numerous professors, too conceited, too crass, or too indolent, to learn their profession, and who ought to be taught it, as Gideon taught the men of Succoth, with briers and thorns of the wilderness.

Yet surely the desire and the capacity to be a gardener is innate in us all; assuredly, there is in every man's heart the dim recollection of Paradise Lost, and the yearning hope of Paradise Regained. The in-

fant smiles and crows (it is usual, at all events, to say that it crows, although, as a father, I am bound to confess that I never heard the performance, except in the case of poultry) and stretches out its hand for a flower. When is the little child so happy as with its ball of cow-slips, or its daisy chain? The small "studies" of our public schools, the old mullioned windows, which look into the quadrangles and cloisters of our Universities, are gay with flowering plants; but then—then come cares more stern, pleasures more feverish, and the simpler, truer, purer happiness of the child and of the youth are sacrificed to the ambitions and to the passions of the man. And only he who retains, or having lost recovers, this innate love of the beautiful, the beautiful in all its forms—only he who loves *all* flowers, not only in his own garden, but wherever seen—deserves, *me judice*, the title of a gardener. I will not say, although it has been said, that "he should be prepared to sit up all night with a sick cactus," but I do maintain, in all seriousness, that his appreciation of floral loveliness should be as catholic, and as enduring, as love itself.

And what is a holiday? The first and best meaning is gone from the word, but it sings still like music in our ears, and brings again to our eyes those "green spots on the path of time" so dear to every pilgrim's heart. The brimming river, the smooth elastic sward, the fields we crossed, the fences we leapt, that day when we ran with our school Orestes to his home, ten miles away, and came back, slightly inebriate, extremely dirty, and madly in love with Orestes's sister, *cet. su.* 13. Happy days! and yet no happier than the holidays of the man who is doing work, brainwork or handiwork; not happier than those of the statesman on the moors, the college-tutor in the flying yacht, the city merchant on the breezy downs.

"If all the year were playing holidays,
To sport would be as tedious as to work,
But when they seldom come,"

and conscience tells us that in some degree we have earned them, then is their fruition complete.

Place the two in conjunction, the gardener and the holiday, and the result shall be some such gladsome grateful individual as I rose, simultaneously with the sun, on the 14th of March last, and, after a season of much sorrow and anxiety, went forth (of course taking such a fond farewell look at my plants as a mother, going a journey, would bestow upon the inmate of the cradle) to enjoy my first holiday of the year at Belvoir.

The earliest happiness of a gardener's holiday comes to him in the bright anticipation of that very earnest and genial welcome which he is sure to have from his friend. He knows that when he arrives there

will be a light upon the face, which flows not from the artificial gas of hypocrisy, nor from the greasy tallow of adulation, but from the warm sunshine of the heart. In the pressure of that hand there will be truth. It would be the same, had they never met before. No need for introductions, apologies, explanations, where men have been thinking the same thoughts for years; no need for tunings, and scrapings, and whisperings, where men have been singing, all their lives, apart, but in perfect harmony, the same anthems of thanksgiving and praise. I passed last summer two of the happiest hours of my life with a gardener whom I had never seen until I entered his home, and parted from him as from a brother. This may read like exaggeration to some; there will be others whose own experience will readily endorse the truth.

Belvoir has a twofold right to its name, being in itself a thing of beauty, and commanding from its wooded heights a distant and delightful view, including that fair vale which Drayton makes to say,—

“I challenge any vale that be, to show me but that thing
I cannot show to her,”

and in which two of our greatest theologians, Cranmer and Secker, were born. The words of other poets occur to recollection, for Duncan's commendation of Macbeth's castle is certainly true of Belvoir,—

“This castle hath a pleasant seat, the air
Nimbly and sweetly recommends itself
Unto our gentle senses;”

and Byron's, of Annesley, is alike appropriate,—

“No sea to lave its base,
But a most living landscape, and the wave
Of woods and cornfields, and the abodes of men,
Scattered at intervals;”

those abodes, moreover, homes of content and plenty, tenanted by men in many cases whose forefathers have been there for centuries, and in all cases by those who love and honour their good and generous landlord, a nobleman by nature as by name.

Upon the sunny side of the eminence, upon slopes surrounded by grand trees and glossy shrubs, which at once protect the flowers and enhance their beauty by contrast, like the graceful frame of a picture, on fair plats, so screened that the Camellia withstands the winter, and Rhododendrons flower in March, are the Spring Gardens. You become aware of their proximity long before you see a sign of them; a delicious perfume of violets greets you, like incense at the temple gate, designedly placed there “to breathe a welcome,” as the designer

happily expressed it. With this sweet reception we enter the garden, and our first sensation (such a sensation as no novelist nor dramatist can give) is—astonishment! It occurs to us that the vulgar expression of knocking an opponent into the middle of next week is not entirely metaphorical, feeling ourselves as though by some mysterious propulsion we had been ejected from March to midsummer. We have just travelled twenty miles by leafless hedges and trees, by gardens whose dark evergreens were only diversified here and there with a forlorn wallflower or a lonely daffodil; and suddenly we stand upon banks all aglow with flowers—flowers of all hues, turquoise blue to purple, pale rose to crimson, clear lemon-yellow to red guinea-gold—beds of all forms, and filled as diversely with contrasts, with harmonies, lines, circles, masses, intermixtures. After the surprise—delight—delight in the scene itself, and delight to see once more so many of the dear flowers of childhood, so long lost and mourned, but now brought back, like royal exiles, with reverence and with honour, home. Surely, if that plump bright-breasted bullfinch, who looks admiringly on from the tree above us, had been trained to pipe, he would make the gardens echo with “Spring’s delights are now returning,” or “The King shall have his own again.” It is a happiness, moreover, to survey such a triumph of taste and of labour over many difficulties. To have brought together so many varieties of vernal flowers, and to have multiplied them to such an extent—to have discovered the best methods for exhibiting them in their most perfect phase, simultaneously, and in an English March,—let the man who has done it say, with a modesty which is ever associated with genius, “It is but a beginning;” we who are privileged to admire his success will cry “Bravo!” with all our heart. If it is “but a beginning,” it is a noble overture, and they who have heard it must yearn for the opera.

Comparisons which only mar our enjoyment by distracting our thoughts and dividing our allegiance, are specially “odorous” (as Mr Ramsbottom termed them) to the true gardener, and we have nothing to say as to the relative merits of the spring and the summer garden. There is ample beauty in both to occupy all our power of appreciation, and they are alike in perfect harmony with the season and surrounding scene. Is true blue or royal purple our favourite tint? In the summer we shall transfer our love and our care from the Aubrietia, the Gentian, the Myosotis, the Scilla, and the Violet, to the Lobelia and the Purple King. Is red our colour? Where the Anemone and the Tulip, the Heath and Rhododendron, bloomed, we have the rose and crimson blushes of the Pelargonium. Is yellow our taste? The Crocus and Doronicum, the Cheiranthus, Oxlips, and Primula have left us; but we can rejoice in the golden splendour of the Calceolaria

and the Marigold, and in the simpler, but not less attractive, prettiness of the new *Viola Lutea*. Is foliage our fancy? and are we lamenting the departure of those spring darlings, the lovely little *Sedum* and the Golden Daisy? are we bemoaning *Ajuga reptans* and *Euonymus R. variegata*? Let us remove our pocket-handkerchiefs, and one look at *Polemonium cæruleum variegatum* (may the godfather be forgiven who gave it that name!) will assuredly stop our tears.

My time was too short and too happy at Belvoir for any elaborate notes. I will state briefly such impressions as may be generally interesting, *i.e.*—

That the man is “sans eyes, sans nose, sans everything,” who has a garden without spring flowers.

That nothing in the garden of Art is so lovely as that which is found at this season in the garden of Nature, the Violet and Primrose; but since we may enjoy these in our woods and fields, I proceed to commend such treasures as we cannot find there.

I select those which all may cultivate, and which all ought to cultivate, from an alphabetical list of spring flowers grown at Belvoir, kindly given to me by Mr Ingram:—

The *Anemone apennina*, for its early large blue flowers, and *A. coronaria*, for colours of all denominations.

The *Arabis*, both for its flowers and its foliage. Two beds of *A. mollis variegata* or *albida* (I know not which, but either will serve), with *Scilla Siberica* placed on my favourite pincushion principle in one, and the scarlet Tulip *Duc Van Thol* in the other, were gems of the first water among the Belvoir jewels. And for leaf, what can be prettier than *Arabis albida variegata*, and *A. lucida* var.?

The *Aubrietia grandiflora purpurea*, a carpet of flower, and *A. Campbellii*, extremely effective. Of the *Aubrietias*, Mr Ingram grows many seedlings of his own.

Next comes, were I competent to elect a favourite, the *Koh-i-Noor* of the collection, the Daisy *Bellis perennis aucubæfolia*, with flowers of crimson and foliage of gold. I will not attempt to describe it. Burns himself would have sent for Mr Andrews, and Mr Andrews would have said, “I can’t paint it.” The other varieties, white, red, and pink, are also well worth growing; but, in the presence of their splendid kinsman, they pale their ineffectual fire, like Giles Gubbins’s younger brothers when Giles comes home on furlough.

Of the *Cheiranthus* (Wallflower) Mr Ingram has a striking variety raised by himself, a clear pure yellow. This fragrant favourite, which used to be seen in my childhood’s days in the Sunday coats of our village labourers, should of course be in all gardens; but of that flower, as of Crocuses, the fresh, rosy, long-enduring *Erica carnea*,

the *Galanthus*, the *Hepatica*, *Hyacinth*, *Myosotis*, *Oxlip*, *Polyanthus*, and *Primula*, it is superfluous to speak.

Of plants less generally known, I would, recurring to my catalogue, commend *Erythronium dens-canis roseum* (Dog's-tooth Violet), which makes an attractive edging; *Euonymus radicans variegata*, a charming plant with silvery leaves, admirable as a floor or a cincture; *Omphaloides verna*, a worthy relative of *Myosotis*, with bright blue flowers; and the golden *Sedum*, previously named, which Mr Ingram uses most successfully as a carpet for taller plants. Of the *Viola tricolor* or Pansy, the best at Belvoir was Clieveden Blue; the abundance of bloom was marvellous.

I must leave reluctantly these beautiful grounds, in which nature and art (I quote with all reverence) have met and kissed each other. Who indeed could think or speak irreverently amid so much that is pure and lovely, amid so many gracious proofs of an infinite power and mercy? Who could gaze upon these exquisite creations and enjoy their sweet fragrance without a silent but earnest thanksgiving to HIM

“ Whose breath perfumes them, and whose pencil paints ! ”

S. R. H.



FRUIT - CULTURE.

THE PEACH.

(Continued from page 193.)

Cultivation under Glass.—This aspect of Peach-culture assumes great importance when we consider that a satisfactory crop of fruit once in three or four years is all that can be obtained over three-fourths of the area of the British Isles. And besides this, there is the further consideration that, by the aid of glass, Peaches can be had from the first week in May till the last in October.

Form of the Peach-house.—For early forcing, we consider the lean-to, with a due southern aspect, the best form of Peach-house. Say that the back wall is 14 feet high, the house 11 feet wide, with an upright front sash for ventilation with a clear opening of 18 inches; such a house will have a rafter 15 feet long, at an angle of about 38°. The back wall should be wired through studs about 2 inches clear out from the wall. The rafters may be trellised in the same way as for Vines to the extent of two-fifths of their length upwards from the front sash.

The wires forming the trellis need not be above 8 inches from the glass, whereas for Grapes they should be 16 inches from it. They should, however, be closer together than for Grapes. It is our opinion

that a Peach-house fitted in this manner exposes a greater surface of foliage and fruit-bearing wood to direct light than any other; for the front trellis in no way obstructs the light from the back wall, if only carried 6 feet up a 15-foot rafter, as recommended. The front wall of the house should either be arched or formed of pillars, with stone lintels laid across from pillar to pillar, so that the roots of the trees may have free access near the surface of the soil to the outside border.

The heating power necessary for forcing Peaches is about one fourth less than that for Grapes, therefore we think three rows of 4-inch pipes round front and ends of such a house as we have suggested is sufficient.

Planting.—Against the back wall the trees should be planted alternate dwarfs and riders, and from 10 to 12 feet apart. Against the front trellis they should be all dwarfs, planted 12 feet apart, and have their wood kept inside the wires, so that a tree can be taken up and removed at any time with facility, which it cannot be if the wood is allowed to ramble on whatever side of the trellis it pleases. The trees should not be tied firmly to the wires, for fear of hanging during the time the border is subsiding. As soon as they are planted they should have a good watering with tepid water.

After-Treatment.—Where the object is to get a Peach-house into condition fit for early forcing, and the trees have been planted, say, in January, the house should be shut up the first week of February, and have just as much fire-heat applied as will keep it at 45° during the night, letting it run up with sun-heat to 55° or 60° during the day. Under such conditions as to heat, and a free use of the syringe morning and evening, the trees will soon begin to burst their wood-buds; and as we are supposing they are young trees from the nursery, we will say nothing of fruit this year. The buds should be rubbed off to such an extent only as will leave abundance of young wood to cover the trellis as it progresses. We have already said we prefer the fan shape for the Peach-tree, nor do we approve of the barbarous system of cutting back the young wood severely. As the season progresses the night temperature may be increased, and the day temperature may be allowed to rise to 75° by sun-heat. If green or black fly makes its appearance, fumigate with tobacco paper; if red-spider, use the syringe more freely still, and sulphur the pipes once a-week. Give plenty of air during the day, and leave a little on the top lights during the night. A free circulation of air aids in the formation of well-matured fruitful wood for bearing next year. If any of the young shoots are taking the lead of the others very rapidly, stop them, and let them branch into two or three shoots. If they still persist in being too gross, dig down into the border beyond where you have reason to ex-

pect the mass of the roots to be, and you will find one or more roots taking the lead of all the others. Cut these back, and fill in the soil again, and this will stop the rank growth of the branches referred to. Towards the month of August the wood will be well matured, and the house should be kept with full air on night and day. The border should have regular waterings during the whole season of growth, and the shoots be kept nicely tied in to the wires as they grow.

In October the trees will shed their leaves, which should be cleared away ; and where the construction of the house admits of it, we would remove the sashes, so as to let the trees, if their wood is thoroughly ripe, have the benefit of the rain and air till the 1st of January, when we would replace them, have the trees pruned, the house cleaned in all its parts, the pipes repainted, and preparation made for commencing forcing on the 1st of February. If the trees have made proper progress, they will have formed a large proportion of fruit-buds as well as wood-buds, and may be expected to bear fruit ; but unless they are growing very vigorously, they should not be allowed to bear above a dozen fruit each the second year. If they are started on the 1st of February, the temperature should begin at 45° at night, rising gradually to 55° about the third week of the month, when they are likely to be in blossom. When in bloom, go over them daily about twelve o'clock, and touch the organs of fructification with a camel-hair pencil. If this is attended to, and the general health of the trees is good, there will be no fear of getting an abundant crop of fruit set. In the matter of thinning the fruit, we have nothing to add to what we have already written. From the time the Peach is set till it is stoned, it should not be subjected, even for an hour, to a fire-heat temperature above 60°, or a sun-heat temperature above 75°. When fairly stoned, which may be discovered by examining a fruit, the Peach will stand nearly as high a temperature as the Pine ; but as colour and flavour depend very much on a free circulation of air, night and day, during the ripening process, we do not recommend a higher fire-heat than 65°, or sun-heat than 80°. When the fruit is ripe it should be looked over daily and gathered by the hand. When all the fruit is gathered the trees should be gone over, and any unnecessary wood removed, to give what is retained more advantage from light and air. The trees should be kept clean, and the border watered, though not to the same extent as during the season of more active growth. We have seen Peach-trees, the moment the fruit was gathered, left without the slightest attention, a prey to red-spider, and the borders cracking for want of water, till the date when it became necessary to think of forcing them again,—than which treatment nothing is more reprehensible.

The third year the trees may be started on the 1st of January; the fourth on the 1st of December, which is as early as it is possible to force Peaches with anything like certain success.

Some of our readers may expect that we should treat of the culture of the Peach in pots. This aspect of its culture comes more legitimately under the orchard-house system of fruit-culture; and should these papers extend to such a length as will allow us to include it, the Peach will, of course, be referred to again.

Selection of Sorts for Forcing.—It is not our intention to give a critical description of the various sorts of Peaches and Nectarines, noting exactly the points where they either differ from each other or agree, but simply to give the names of those that we know to be suitable for the purposes they are recommended for, believing that this is all the great majority of our readers require. All who wish for exact descriptive information about Peaches, or any other description of popular fruit, will find it in the 'Fruit Manual,' by Dr Hogg; or the 'Orchard-House,' by Mr Rivers.

LIST OF PEACHES.

Royal George. An excellent Peach; forces well, but, like the Noblesse, the tree is very subject to mildew.

Bellegarde, or Early Galande, is a fine Peach and forces well, the tree vigorous.

Stirling Castle. A grand Peach; the tree is of vigorous habit, bears freely, and forces well.

Grosse Mignonne. One of the finest of Peaches, but the tree is delicate and liable to mildew.

Noblesse. A grand Peach, but the tree is also delicate and liable to mildew.

Violette Hâtive. Resembles the Bellegarde closely, and is an excellent Peach.

From our own experience we can recommend these as being first-class varieties, either for cultivation under glass or in the open air.

As late Peaches we can recommend Warburton's Late Admirable, Barrington, and Thames Bank. The latter is a yellow-fleshed Peach, and very ornamental in the dessert.

In addition to those named, we have reason to believe that Mr Rivers has raised a number of most valuable varieties, as indicated by T. F. Rivers in our May number; besides which, we know that a Peach raised by him, and named after Dr Hogg, is of first-rate excellence.

LIST OF NECTARINES.

Elruge. This is a first-class variety, either for forcing or outdoor cultivation.

Early Newington. This is a clingstone, but when fully ripe is a high-flavoured fruit.

Hunt's Tawny. Pale orange colour, a free-growing good variety.

Pitmaston Orange. This is a great bearer, and the fruit is of fine quality.

Violette Hâtive. A large fine fruit.

Stanwick. A delicious variety, but rather apt to crack before it ripens.

White Netrine. This is a beautiful addition to the dessert. The fruit is large and of a creamy-white colour, but the flavour is only second-rate.

Victoria. This variety has been raised by Mr Rivers. We had eighteen fruit on a small plant of it in a pot last year; we gathered them just as they were beginning to shrivel a little, and never before did we taste a Nectarine with such an exquisite flavour. We were so struck with it, that we procured three trained plants of it which we have planted in forcing-houses. It is the prince of Nectarines.

There are many other varieties, both of Peaches and Nectarines, that may be worthy of a place in large establishments; but we have indicated a sufficient number of the very best for the wants of those for whom these papers are specially designed. W. T.



NOTES ON GREENHOUSE PLANTS.

(Continued from page 196.)

AGAPANTHUS UMBELLATUS (AFRICAN LILY),

SAID to be introduced from the Cape of Good Hope in 1692. This old species of Lily contributes a very imposing effect to a conservatory in August and September. The lovely umbels of bright blue, standing boldly erect among other plants, contrast well, and at the same time make them strikingly conspicuous; indeed, their presence never fails to draw greetings and flattering remarks, especially from the ladies, though their construction debars them from entering largely into the hand-bouquet, unless in single flowers plucked from the crown.

Propagation.—This is accomplished by seed, division of the roots, and offsets. From seeds, by sowing in a pot any time between March and June, so that the seedlings may acquire sufficient strength to resist the changes in winter. Plunge the pot to the rim in gentle bottom-heat, and keep the soil constantly moist, both before and after the plants appear above ground. Pot off as soon as the seedlings can be conveniently handled, and attend afterwards to watering, shading,

&c., as is usually done with such seedlings. Division of the roots and offsets are a ready means of extending the stock. For a compost, a light loamy mixture, with sand incorporated to the extent of one third of the bulk, will do.

General Culture.—Little need be added to the attention generally demanded by free-growing plants. They all delight in high living. A rich heavy loam, with a third of well-reduced cow-manure and sharp river-sand thrown together without riddling, will make them grow strong and well. Admit air abundantly, administer water copiously in the growing season, adding a stimulant in the shape of a little guano to the water, when the flowers are in the process of formation; and wherever situated, air plentifully supplied ought never to be neglected when the flowers are expanding, else the flowers will be deficient of their bright blue, so much appreciated, as well as of good substance. When the flowers have dropped, cut down the stems half-way and prevent seeding, unless particularly wanted, when one crown will be enough to leave; and it ought to be remembered that a stance in a vinery for a month in autumn is of material consequence to the maturing of the plants, as well as securing an advanced state of condition for the following year. They may then be allowed to go quietly to rest, by withholding water to a considerable extent, permitting the soil to get almost dry in their pots. The plants will then be quite indifferent whether they are placed above, below, or behind the stage of the greenhouse throughout the winter; only, if below, they must be turned on their sides, looking towards the sun, that they may enjoy any blinks that penetrate through the openings.

A. variegatus is also a commendable variety, with its silvery-striped foliage.

HYDRANGEA HORTENSIS

is an extensively known and highly ornamental plant, introduced from China in 1788. Then we have *H. Japonica variegata*, of more recent introduction. Some years ago this genus was patronised universally by rich and poor,—the common mark of cleanliness and happy contentment in the cottage, cheering its inmates with noble globes of pink and bluish flowers, which lasted untarnished for months together, gladdening and inviting the way-weary traveller within, to quench his thirst and take a moment's ease. Such are part of its pleasant attractions on the wayside.

Propagation.—Select the stoutest and stubbiest growths, detaching the lowest pair of leaves. Insert them in light sandy soil, and cover with a hand-glass in the greenhouse, or plunge them inside a frame. A little air and water is all they require, until they are rooted. Ten days will accomplish the rooting process with bottom-heat while the

cuttings are in a succulent state, but they require more time when hard. The cuttings rooted, transfer them into pots 4 inches in diameter, appropriating for their use part of the mixture recommended for the *Agapanthus*, encouraging continuous and healthy growth by the application of heat, air, and weak liquid-manure—the latter given only after they are established in the soil. Pinch out the crowns that laterals may be formed; and when those laterals have attained to sufficient length, pinch every alternate one in their turn, which will provide a succession of flowers; or, if thought preferable, one plant may be allowed to flower every growth, while another may have all its points pinched back that it may produce its flowers at a later period. Another good method ought not to be lost sight of—viz., striking the single stems after it is ascertained that they contain crowns of flowers. Perhaps no other plant will submit, to the same extent, with impunity to what apparently is outrageously violating nature's laws; but withal, it is none the less a fact that those stems strike freely, and produce crowns that will stand comparison with the best on the mother plant. The pretty effect of those miniature plants, studded promiscuously through the conservatory, has already been proven in hundreds of cases. Such being the object, those points should be expertly handled, detaching them about 5 inches long, cutting them smooth and square below the lower joint, inserting them around the edge of a large pot, among silver sand and leaf-mould equal parts. Plunge to the rim in a hotbed, and cover with a bell-glass. Keep them close until rooted, and cover with a piece of paper in sunny days. Rooting accomplished, they should immediately be transplanted into pots 4 inches diameter individually, draining sufficiently, that a ready outlet may be afforded for the liquid-manure waterings necessary to develop the flower-crowns to perfection. But it should be remembered that those waterings, to have a stimulating and not a detrimental effect, should not be applied until the roots are established in their new pots. At the same time, the plants ought always to be provided with abundance of moisture at the roots.

NERIUM OLEANDER (ROSE-BAY),

according to some authorities, was introduced from the south of Europe in 1596; truly "a relic of by-past days," which has lived to witness many a lovely gem thrown aside to make room for some new favoured fancy. In this genus there are now a goodly variety, of which the following may be enumerated among the worthies: *N. splendens*, bright carmine; *N. luteum flore-pleno*, double pale yellow; *N. luteum roseum*, light yellow and rose.

Propagation and General Culture.—Cuttings of the young shoots,

inserted in a mixture of stiffish loam and sharp river-sand, under a bell-glass, will root freely in June. In every other way attend to them as has been advised for the *Hydrangea* throughout all their growing stages. The same in regard to providing shoots of different ages, that the plant may not one year be wholly without flowers, and the next bearing a truss on every point; unless some plants are treated so as to provide a full complement of flowers, and the others pinched back to succeed them the following season. About the commencement of September, water should be provided in reduced quantities, and the plants exposed freely to sun and air. This has a hardening tendency, and will secure perfect flowers in a great degree in spring. After this, the plants may have their portion of water reduced to the extent of causing the foliage to all but shrivel, and the same condition of things adhered to over the winter. The first symptom of returning growth is the signal to have the old surface of soil removed from each pot, and a dressing of equal portions of well-reduced cow-manure and fresh loam applied instead; then saturate the dry balls, and attend regularly to giving a copious supply of water, until the flowers have decayed, when the old flower-shoots may be cut back to a few eyes beyond the junction, which in their turn will reproduce blooming wood. In conclusion, it should not be forgotten that, throughout the period gone over, the plants should be specially provided with root-room, and due attendance given to training as well.

CORONILLA GLAUCA.

This is a native of the south of France, and was introduced to this country in 1739. *Coronilla* is especially valuable in winter, when it yields its profusion of beautiful yellow flowers. Then we have as a companion, *C. variegata*, with its charming golden-striped foliage. Both are extremely ornamental, either trained over wire figures, or subjected to a rigorous method of growing and pinching until they form nice dwarf bushes. Strike the cuttings from shoots half hardened. After they are struck in a little heat, a stance in a cold frame may be allotted them, in a situation where they may have the benefit of the afternoon's sun, when uninterrupted attention to watering, training, airing, and pinching, comprehends their main requirements, with larger pots when stinted of root-room. About the middle of September the lights may be removed, and the plants exposed for a while before consigning them to the greenhouse. Thus cared for, their subsequent wants are comprised in watering, turning, and tying in the flower-shoots before blooming; after which they ought to be nicely trimmed back, and a shift of pots of larger dimension provided for them, and every encouragement given to excite a strong and healthy growth.

CLIANTHUS PUNICEUS.

We have seen, planted in a prepared border, one old plant wholly cover the end section of a conservatory with a drapery of elegant foliage, and brilliant scarlet hanging trusses. The effect of its singularly-constructed flowers, thickly scattered over the surface of the leafy wall behind, is an achievement that is more readily appreciated than described. *C. Dampierii* trained in a like situation, I suppose, would still heighten the effect; its dense black spots in the centre of the flowers would add a fine contrasting feature to the green and scarlet. The same treatment in every way will suit this family as has been described for *Coronillas*.

A. KERR.

(To be continued.)

CLAY MANAGEMENT.

(Continued from page 210.)

WE now proceed to review some of the schemes we have recourse to in cropping a heavy clay. We have already hinted that every inch possible must be ridged in winter; but it of necessity happens that large spaces cannot be so served, and yet must be cropped in the succeeding summer—as for instance the ground which has been under Brussels Sprouts, spring Broccolis, winter Spinach, Tripoli Onions, Parsley, &c. It is useless to dig up such ground for any summer crop, even suppose it possible with much labour to reduce the surface to a degree of fineness apparently sufficient. Underneath it lies hollow and lumpy, and nothing succeeds satisfactorily. The best plan is—if winter greens must be again planted, which cannot be entirely avoided at all times—to hoe the surface over level, and make holes with an iron bar or heavy piece of wood with an iron shoe, insert the plant, and fill in with a handful of fine soil. If the quarter has lately been trenched, and in tolerable good heart, Broccolis will succeed perfectly, also Borecoles—indeed the rank, watery, late growth so natural on a heavy clay in autumn is much obviated by this plan. We often sow our Turnips for winter on such ground, as they are off in time to allow of ridging. After hoeing the surface over deeply and raking level, a slight coating of rotten manure or leaf-mould is spread all over, shallow drills are made in it, the seed sown on the hard surface and covered in; and Turnips uniformly do well on such hard surface with occasional waterings if required. Ground for Potatoes is thrown into 3-foot ridges in winter, with the bottom of the ridge also dug, which is equal to trenching. In spring, manure is wheeled or carried into the drills between the

ridges, the sets planted, and the finer part of the ridges broken down and thrown over the sets, making all level ; the spaces between the rows are then forked up loose ; and if the weather is favourable—that is, if there has not been a continuance of wet—the rows are slightly earthed at the proper time as the Potatoes advance ; but if wet weather ensue, it is useless—and, indeed, we believe the crop is not much benefited by earthing on this plan. French Beans are quite unmanageable on heavy clay. For them we throw out narrow ridges, as for Celery, early in spring—of course on a smaller scale. The ridges are filled in with rotten manure and covered with a little soil, the whole surface made level and left to the weather until planting-time, with a stick inserted at each end of the ridge to show where the manure lies. A good supply of French Beans can be raised from a small space, to come in between the last forced and those from the outdoor ridges, if kept closely packed on the top of a bed of leaves or manure-heap, or in any temporary frame or pit which may have been used for bedding stuff, by having the Beans in 4-inch pots, ready to plant so soon as the bedding plants are out of the way. Of course those who are fortunately in possession of a fine warm soil will be amused at these suggestions, and we envy their felicity. Celery is much better planted almost on the level of a heavy clay—that is, the ridges are made shallow and early in spring ; and when the manure is put in, the ridge will be only a few inches below the general surface. Celery does not grow kindly early in the season in the cold bottom of a deep trench in heavy clay. The finest of the soil must be reserved for putting next the plant at earthing-up—fine ashes are excellent for this purpose, or river-sand. The earthing of Celery is always a serious affair on a heavy clay, although the Celery itself is, as a rule, fine and crisp, and not liable to run to seed. Last year our Celery was unusually fine, and never was but once watered—of course the season was on the moist side. Cardoons are managed like Celery ; White Beet and Leeks like French Beans, only the little ridges are left hollow for earthing-up.

Raspberries, Currants, and even Gooseberries dislike a retentive soil, but especially the first. The only alternative with the whole is, first to have the ground in as good condition as possible by manure-trenching and mixing with loose materials, and then plant high, leaving a valley between the rows. Afterwards we persevere in top-dressing with fine ashes and rotten manure, which is pricked in with a fork ; this has the effect of keeping the roots near the surface. Raspberry-roots delight to lay hold of the ashes and manure. Liquid manure can also more easily be given than if the surface was a hard cake of clay. Fruit-tree borders of every description must be to a large extent forced,

the worst of the clay removed, and the remainder mixed with fresh turf, river-sand, and charred materials, or any light mixture that can be come at. But after the work has been done to the best possible advantage, it is disappointing to find, after a few years, that the turf, selected with the greatest care, and having been at some trouble, in order to obtain it, to gain over the land-steward and cajole the bailiff, has almost returned again to genuine clay when the fibre has decayed out of it. It seems to have a "kind of an alacrity" in changing to clay, as Sir John Falstaff had at sinking; he would "down" by his natural weight, so with our turf.

Flower-gardening on the clay will be found stiff work. There is nothing for it but to make the beds entirely of other soil—no easy matter if such has to be carted miles, and even then the surrounding clay and subsoil keeps the new material cold. It is well to fill in a foot or more of the bottom with cinders or broken bricks, and raise the soil above the general surface. Some years ago we had to remodel an old flower-garden in the geometrical style on grass. After the turf was removed, we found we had a surface something like an American cheese to work upon. After levelling the ground, the beds had to be cut out of said cheese—the soil of the old beds being saved for the new, the old beds in turn filled up with the excavated clay. However, by dint of perseverance and hard labour, most things succeed well—indeed, the fault is that in autumn most plants grow too well. All Geraniums are planted out in their pots, or rather tiles, being open in the bottom. Calceolarias succeed admirably also. All the hardy herbaceous bedders—such as Viola, Nepeta, Pansies; lines of such things as Verbenas, Variegated Geraniums, Alyssum, Perilla, &c.—require a little trench filled with manure to insure success. The great secret is to have all beds and borders well raised above the general surface, out of the influence of the damp cold of the surrounding clay, with plenty of drainage, like a pot half full of crocks.

After all, were we to balance the advantages and drawbacks against each other of a heavy retentive and a light dry soil, we would, on the whole, prefer the former. Even in this instance extremes meet, and we would hail the happy medium.

THE SQUIRE'S GARDENER.



LATE PEACHES AND BEDDING PLANTS.

WHEN the Spartan youth complained to his father that his sword was too short, the old man met the difficulty, not by providing a longer sword, but by curtly telling his son to add a step to it. Dauntless

courage and determination were to make up for the deficiency in the weapon. Dauntless courage and determination! what will these not accomplish? They are elements in human composition which are indispensable in every path of life, as well as in that of the youthful warrior. Need I tell the enthusiastic gardener how indispensable they are to enable him to overcome the many difficulties which lie betwixt him and success? So many have to carve their way to success with a sword which is too short, that they can well enter into the spirit of the old Spartan. Whoever can be termed what women call dawdlers, or shiftless, we never knew a successful gardener who could be put in that category. They are and must be shifti fellows. I say *must be*, for the gardener who shirks difficulties, or allows his application to falter, is on the sure road to ultimate failure. Morning, noon, and night, he must be on the look-out for enemies, even when the means at his command are of the most ample description. And most especially, when the sword is too short, there must be no sheathing it till a longer comes to hand—no “waiting till Blucher comes up;” he must push and fight on, adding the step to it if anything like success is to be the issue.

It is not my intention here to catalogue the gardening difficulties of the day; that would be a formidable and probably fruitless undertaking. But now that one of the hardest battles of the year has just been fought out by many a gardener with a sword all too short, I would call attention, not so much to the difficulties of the gardener, as to the evils that are attendant on inadequate means, and which concern owners of gardens very much—more than many appear to be aware of. What I refer to is the very inadequate amount of glass with which numberless gardeners have to provide the tender plants necessary to make their flower-gardens gay in summer and autumn. This is a want which not only entails upon the servant a great amount of anxiety and fruitless labour, but is in many cases a cause of positive loss to the employer. Hundreds of gardeners have very little else in the way of glass-houses or pits in which to propagate and rear thousands of tender plants, besides a few vineries and peach-houses. Now, in the first instance, nothing can be worse for the well-being of Vines especially than to have them crowded from stem to stern with flower-garden plants. Take for instance the floor of a vinery. It is covered for six weeks or more with plants requiring to be heavily watered daily, while the Vines are expanding their foliage. The inside border is rendered little better than a puddle. The atmosphere of the house is surcharged with moisture, and unless a high temperature is maintained, mildew is a likely and pregnant evil. With high and over-moist temperature the foliage becomes warty, and the

growth of the Vine is sadly checked. This is a disease which scientific men with no practical experience almost invariably attribute to something amiss at the roots of the Vine. But I will undertake to produce it as a regular thing by a close over-moist atmosphere, or to avoid it by contrary conditions. This is only one of many evils which are consequent on the gardener being deficient of proper convenience for the rearing of plants. Then how many gardeners have to turn these plants out under mats in some shady sheltered corner, where, after having made a tender growth in warm vineries, they are susceptible of injury from many causes, and where they do not get that sun and air which are indispensable to their well-doing when planted out. Plants that are managed thus are sure to suffer when planted out in beds thinly, after being crowded together under mats; whereas if the protection of glass could be afforded them in the full blaze of the sun, and with a free circulation of air about them, they would scarcely receive any perceptible check when planted.

There are many places that could be named where this deficiency of accommodation exists, and where the Peach crop on the open wall is the most uncertain imaginable. In one year out of six, perhaps, there may be a crop of inferior fruit; and where, if they were covered with glass, the crops would very soon repay the outlay, besides affording space for a host of bedding-plants on the floor of the house without injury to the Peaches. I know of no combination in the whole round of gardening that answers so well as a cool Peach-house with the trees on the back wall and the floor devoted to bedding-plants. And I need not tell a gardener what an amount of labour it saves when there is such a house, giving the best place for wintering and potting-off his whole stock of, say, Geraniums, and where they can be allowed to remain till the middle of May, and be then turned out hardy and bristling with bloom-buds. This is an immense advantage in many ways, and would, in the tear and wear of mats, &c., soon pay the cost of erection, keeping out of view altogether the quantities of splendid Peaches that can be produced every year. And if, after the bedding-plants are turned out in May, the floor of the house is thinly occupied with flowering and foliage plants, it affords a most effective display all summer and autumn.

Where this difficulty exists, and has to be met by erecting glass in order to relieve forcing-houses of the injuries which attend their being so much and so long crowded with plants, I would strongly recommend the covering of the miserable-looking and fruitless Peach-wall. We have a house here 130 ft. long by 11 ft. wide, having a flow and return hot-water pipe in it, which holds 9000 Geraniums in 3-inch pots; and after they are turned out the floor of the house is turned into a con-

servatory all summer and autumn, and the back wall is always fruitful of Peaches. Such a house affords so much convenience and ease to the gardener, so much supply and pleasure to the employer, that they cannot be too strongly recommended. To provide such a house in proportion to the demand for plants would be like putting a long sword into the hands of those who cannot take the Spartan's advice, however determined and courageous they may be. D. THOMSON.



NOTES BY THE EDITOR.

WE had heard a great deal of the famous vineries erected at Barrassie, near Troon, in Ayrshire, the summer residence of D. Y. Stewart, Esq. of Glasgow,—we had even read of them in the leading article of a contemporary; and as we had an invitation from their proprietor to visit him and form our own judgment of them, we availed ourselves of it on the 11th of last month.

Leaving Glasgow by the Glasgow and South-Western Railway, we passed Paisley, once the most celebrated spot in Scotland for the cultivation of florist's flowers, and still holding its own in the struggle for pre-eminence. Who can say that the fame it has achieved, as one of the seats of highly artistic manufactures, is not in great measure the result of the fine taste engendered by the cultivation of these? Farther on we passed Kilburnie Loch, near which we believe a horse-fair is held annually, where Burns purchased one of the horses referred to in his famous "Inventory" as

"A daft redwud Kilburnie beastie."

And farther on still we passed Lochwinnoch, where stand the gigantic iron-works of Merry & Cunninghame; and after a ride of 33 miles we arrived at Barrassie station. We were told before we left home, by a friend who had seen the vineries, that when we got to the station we were to look westward, and two objects would present themselves to our vision to the exclusion of everything else—viz., Mr Stewart's largest vinery and Ailsa Crag. We obeyed the injunction, and saw the vinery in bold relief against the western sky; but a haze on the sea shut the Crag out of view. We met with as hearty a welcome and as liberal hospitality from Mr Stewart and his family as if we had been very old friends—such is the happy influence of a love of kindred horticultural pursuits.

Now for an attempt at a description of the vineries. We may remark in passing that Mr Stewart's garden is within fifty yards of the sea, and exposed to heavy gales of wind from the west, which carry

the salt water so far inward that not unfrequently it kills all the vegetation in the open ground of the garden. To remedy this was one of the objects in building such lofty vineries between the garden and the sea.

Mr Stewart began some ten years ago by building two vineries and a peach-house of the usual moderate dimensions. These, however, had the effect of inflaming his passion for Grape-growing, till he determined to build houses of grand dimensions, and after plans chiefly conceived by himself—and we must confess they are thoroughly original. The first we shall refer to is the early Black Hamburg house, 90 feet long, 30 feet high, and 24 feet wide, equal-span-roofed. This house stands on solid mason-work 7 feet high to the floor of the house. In chambers underneath the border—which is all inside the walls, and 2 feet 9 inches deep, of well-prepared soil—are thirty-two rows of 4-inch pipes for bottom-heat. Into these chambers air can be admitted at pleasure from the external atmosphere, which, after getting heated, passes from a thousand points all round near the front ventilation into the general atmosphere of the house. Mr Stewart gave us convincing proof of this by ordering some paper to be set fire to in one of the openings, when the smoke came up all round the house. For early forcing, this is a very excellent method of admitting fresh air into a vinery, in addition to which it thoroughly accomplishes the primary object of its construction—the heating of the border. Over the chambers referred to, and immediately under the soil, is placed a complete stratum of perforated bricks, to admit air for the thorough aeration of the soil, which air is previously heated in the chambers underneath. The atmosphere of the vinery is heated by thirty-two rows of 4-inch pipes; and as a border so placed and heated requires an ample supply of water, two iron troughs run the whole length of the house. They are about 18 inches deep, and the same in breadth. These troughs are kept constantly full of water, which attains the same temperature as the house, and from them the border gets liberal waterings when necessary. A broad iron path runs from one end of the house to the other between the two troughs. There is a flight of stone steps at each end, for ascent and descent from the vinery to the garden level. Whatever may happen to other vineries from the bad effects of stagnant water in their borders, nothing can happen to this one from that cause at any rate. So much for the first floor. A flight of wooden steps took us up into the gallery, which rests on strong girders run across from rafter to rafter. The strength of the girders is necessary to resist the terrible force of such gales as blow on the sea-coast where the vinery stands, more especially such as we have had this season. During that of the famous Friday, the 24th of January last, the pressure was 44 lb. to the square foot, or something like

100,000 lb. of pressure on one of the sides of the vinery. The gallery is a fine wide promenade, and is very convenient for thinning the Grapes, tying in the shoots, or performing any other operation that may be necessary *aloft*, to use a nautical phrase. The Vines are planted one row 3 feet apart along the front sashes on each side : these are to be the permanent Vines. Another row is planted on each side, equidistant between the fronts and centre path : these are temporary, and will be cut out when they have borne one more crop. The Vines have been three years planted, and are now at the apex of the house on both sides. The permanent ones will not be allowed to bear fruit to the top next year ; the temporary ones will. Thus the house will be furnished with fruit-bearing wood for next year. When we saw the Vines, all the fruit was cut except a few bunches kept for private use, and they were of fine quality though the bunches were small. The wood was thoroughly ripened, the foliage clean and healthy, and everything presenting the prospect of an ample crop next year. The ventilation is effected by raising the ridge on the roof in sections, and by the admission of air by a luffer-board all along the front on both sides. The house stands south and north. So much for the Hamburg house.

Now for the Muscat house, which, though entirely different in its construction, is equally original. It is span-roofed, stands south and north, is 125 feet long, 11 feet wide, and 13 feet high. It has iron girders across it at a height of 7 feet from the path ; on these rest a wooden path or shelf on which a man can ascend and stand while working amongst the Vines, but he cannot walk along it, for the house, in addition to being trellised in the usual way for Vines, is trellised across from side to side every 6 feet. One set of Vines is planted and trained in the usual way within a foot of the glass ; another set, alternate with those, is trained on the cross section wires, if we may so describe them. Thus my readers will understand that instead of looking up at a surface of foliage and Grapes depending from wires fixed to the rafters in the usual way, they look up into a mass of foliage and fruit, filling the whole space above 6 feet in the house where the centre path is, and slanting off like the letter V turned upside down. Whether this may succeed we are not sure. In the case of Hamburgs we would be more hopeful than that of Muscats ; for our experience leads us to conclude that they require all the sun of a long summer fully on their foliage to finish them in good style, and unless they are so finished they are very second-rate fruit. The border for this house is partly inside and partly outside. It is heated underneath, and provision is made for covering it with water-tight shutters when thought necessary. The Vines were planted last year, and have made good use of their time. They were all at the

apex of the house when we saw them. They had been cut back last year to about 4 feet from the surface of the border, and were bearing from one to three bunches each. The fruit was just thinned and very promising.

Here, then, we have an amateur breaking through what may be termed the recognised rules of Grape-growing, and carrying out his own ideas boldly, and at a cost of something not far short of £3000. We heartily wish him success, and shall watch his progress with no small amount of interest; and if spared, our readers may have some account of our second visit to Barrassie, and we promise that it shall not be so tedious as some of them may consider this. We shall then have to refer to results only.



NEW PLANTS OF THE PAST MONTH.

At the head of these must be placed those fine hybrid novelties of the genus *Coleus*, raised at the Royal Horticultural Gardens, Chiswick, by M. Bause, and which have been recently distributed by public sale. The plants operated on by the hybridiser were the following: "*C. Verschaffeltii* was throughout the seed-bearing parent; this was fertilised by *C. Veitchii*, by *C. Gibsoni*, and by *C. Blumei*; and in the offspring there is abundant evidence that true crosses have been effected. The novel forms which have been produced range in two series—the one having flat crenated leaves, as in *C. Veitchii*; and the other having inciso-dentate frilled leaves, as in *C. Verschaffeltii*; so that some follow in this respect the mother and some the father plant." It will be observed that, with the exception of one of these hybrids named after M. Bause, the hybridiser, the remainder were named after the gentlemen composing the Council, or otherwise filling important positions in connection with the Society. Twelve hybrids were selected from a batch of seedlings, named, and offered for sale. Of these Messrs Veitch & Sons obtained *C. Bausei* (59 guineas), *C. Batemanii* (49 guineas), *C. Berkeleyi* and *C. Ruckeri* (each 40 guineas), *C. Scottii* (36 guineas), and *C. Saundersii* (£26). All of these subsequently received first-class certificates from the Floral Committee of the Royal Horticultural Society. To the frilled-leaved series belong *C. Bausei*, with leaves of a rich velvety-chocolate purple, green towards the base and at the extreme margin; the under-surface of the leaves slightly blotched with purple, and the stems green: a richly-coloured, fine, and distinct hybrid. This was from *C. Verschaffeltii* crossed with *C. Veitchii*. *C. Batemanii* has deep purple leaves so

coloured above and beneath, here and there very slightly mottled with green; the leaf-stems purple. This was from *C. Verschaffeltii* crossed with *C. Gibsoni*. *C. Scottii* has bright green leaves, everywhere traversed by deep purple veins, here and there coalescing into blotches; the under-surface similarly marked, but of a brighter colour; the leaf-stem purple. This also was from *C. Verschaffeltii* crossed with *C. Gibsoni*. Of the plane-leaved series Messrs Veitch & Sons had *C. Berkeleyi*; the surface of the leaves, both above and beneath, a rich velvety-chocolate purple; the stems green, slightly speckled, and clothed with purplish down: a beautiful and richly-coloured plant. This came from *C. Verschaffeltii* crossed with *C. Veitchii*. *C. Ruckeri* has leaves deep purple throughout on both surfaces, with purple stems. This came from *C. Verschaffeltii* crossed with *C. Gibsoni*, and is a fine sturdy-growing plant, and may be regarded as the crenated counterpart of *C. Batemanii*. *C. Saundersii* has leaves of a deep chocolate purple in the centre, somewhat mottled, and of a pale bronzy tint towards the edge, which has a broadish band of green, broken through with purplish bronzy reticulations; under-surface blotched with purple in the centre; stems green, blotched with purple. This is a very much improved form of *C. Veitchii*, but far superior to it in beauty, and came from *C. Verschaffeltii* crossed with *C. Veitchii*.

Messrs Carter & Co. of Holborn, London, obtained four varieties—viz, *C. Dixii* (£49), *C. Wilsoni* (14 guineas), *C. Clarkei* (10 guineas), and *C. Reevesii* (5 guineas). To the plane-leaved series belong *C. Dixii*, having leaves deep chocolate purple in the centre, feathering out through the broadish bright green margin, which is nearly an inch wide, the notches being narrowly edged with purple: a bright-coloured and effective variety, from the strong contrast between the rich green and purple, and considered to be one of the finest. It came from *C. Verschaffeltii* crossed with *C. Veitchii*. To the frilled-leaved series belong *C. Clarkei*; leaves green above, with the edge of the teeth purple, and showing through the dark purple veins with which the under-surface of the leaves is almost everywhere marked; the leaf-stems purple, mottled with green: a fine dark-tinted variety which came from *C. Verschaffeltii* crossed with *C. Gibsoni*. *C. Wilsoni*; the leaves of a rich velvety-chocolate, shaded with purple; the base of the leaf and the teeth slightly tipped with the same colour; the under-surface freely mottled with purple; the leaf-stems green, mottled with purple: an elegant variety, and quite distinct in character. This came from *C. Verschaffeltii* crossed with *C. Veitchii*. *C. Reevesii* has leaves filled with coarse wavy teeth, green, mottled with bronze and purple, sparingly dotted towards the base, and laid on in close reticulations and patches towards the edge,

the centre being deeply tinted, and entirely of a dark colour, and the teeth green, with narrow purple edges ; stem green, blotched with purple : a variety much less deeper coloured than any other. This came from *C. Verschaffeltii* crossed with *C. Blumei*. The other two varieties were purchased by Mr Wills, late of Huntroyde Gardens, now manager of the Ashburnham Park Nursery, Chelsea, London—viz., *C. Marshallii* and *C. Murrayi*, each 25 guineas. Both of these belong to the plane-leaved series. *C. Marshallii* has leaves of a rich chocolate purple ; the base of the midrib and the notches green, so as just to form a narrow green margin ; the leaf-stems green. This has a more apparent green edge than *C. Berkeleyi*, and is the plane-leaved counterpart, as to colouring, of *C. Bausei*. It came from a cross between *C. Verschaffeltii* and *C. Veitchii*. *C. Murrayi* has green leaves marked along the principal veins with bars of dark purple, the rest of the surface showing through beneath the purple veins ; the stems purple : a more regularly and more fully coloured form of *C. Gibsoni*, and therefore an improvement on it. This came from *C. Verschaffeltii* crossed with *C. Gibsoni*. The two varieties purchased by Mr Wills also received first-class certificates ; but Messrs Carter & Co. have not publicly exhibited their purchases since they passed into their hands, or there is no doubt each would have received the same award at the hands of the Floral Committee.

Messrs W. Bull, and E. G. Henderson & Son also announced batches of new hybrid *Coleus*, the seedlings having been raised by the former. As yet they have not been prominently shown.

Mr Wills also has a golden-foliaged sport from *C. Blumei*, obtained by Mr M'Phail, gardener to C. Telford, Esq. of Bromley. The leaves have a decided yellow tint, with slight pale chocolate marking. The character is quite fixed ; and should it prove a good bedder, it will be a good acquisition. It has been named *C. Telfordi aurea*, and was awarded a second-class certificate.

Just now new plants multiply with great rapidity, and at the bi-monthly meetings of the Floral Committee numbers challenge their judgment. Foremost must stand Orchids, and of these *Oncidium Marshallianum* "was one pre-eminently splendid, and must be admitted to bear away the palm from all yellow *Oncids*." It was awarded a first-class certificate, as were also *O. serratum*, with large brown flowers, edged with gold ; a plant that afforded an example of unusual structure, in that the two petals had become conjoined ; but when it first flowered with the Bishop of Winchester, some of the flowers were without sepals, others without petals : and *O. cucullatum*, a small spotted kind. The two former were shown by William Marshall, Esq., the latter by Messrs Veitch & Sons. *O.*

pubes, in the shape of a fine deep-coloured variety, also from Mr Marshall, received a second-class certificate.

The fine pale-coloured *Anguloa* shown by Messrs Veitch & Sons, and referred to last month, has been named *Uniflora splendens*, and awarded a first-class certificate. The same award was made to *Saccolabium ampullaceum Moulmeinense*, from Messrs W. Rollisson & Son. Of it Mr Bateman said "that the ordinary pale-pink variety was considered fine until now when we had got better, and he must confess that the power of rose could go no farther than in this fine Moulmein variety." *S. curvifolium luteum*, from J. Day, Esq. of Tottenham, received the same award. The flowers are of a fine yellow, and the plant came as a sport from *S. curvifolium*. *Burlingtonia fragrans major*, from Messrs Veitch & Sons, received the same award. It is considered to be a great acquisition.

To the following Orchids were given second-class certificates: *Laelia grandis*, from Messrs Veitch, a fine buff-flowering kind of easy culture; and to *Cymbidium Huttonii*, a kind with spotted deep chocolate-coloured flowers, from the same exhibitors: to *Epidendrum inversum*, an old but very scarce pale flesh-coloured kind, very fragrant indeed, from S. Rucker, Esq.; and to a very handsome variety of *Trichopilia suavis*, from Mr Woodward.

First-class certificates were also awarded to *Nidularium atrosanguineum*, and *Cocos Weddelliana*, an elegant Palm; and *Maxillaria lutea alba* received a second-class certificate: all from Mr B. S. Williams. Also to *Aphelandra Chrysops*, with bright yellow flowers, and having the appearance of being free blooming; to *Scutellaria Mocciniana*, a handsome greenhouse plant, bearing terminal clusters of bright scarlet flowers; and a second-class certificate to *Begonia Huttoni*, with pale buff flowers: all from Messrs Veitch & Sons.

The following Ferns have received first-class certificates: *Lomaria gibba major*, having much stouter fronds than *L. gibba*, the leafleted portion stronger and broader also, from Mr W. Dean, Shipley, Yorkshire; *Acrostichum* (or *Rhipidopteris*) *palmatum*, a handsome little Fern with palmate fronds, from Messrs Veitch & Sons; *Cibotium spectabile* and *C. regale*, two magnificent tree Ferns; *Asplenium auriculatum* and *Zamia Ghellinckii*, all from Mr B. S. Williams. The same high award to *Clematis John Gould Veitch*, a pale mauve-coloured form of the double-flowering *Clematis Fortunei*, from Messrs Veitch & Sons; to Hybrid Perpetual Rose *Madame la Baronne de Rothschild*, a pretty silvery pink-coloured and well-formed variety, but sadly deficient in substance, from Mr William Paul; to *Juniperus excelsa stricta*, quite nice, neat, little, pyramidal bushes; and to *Rhododendron fragrantissimum*, a kind with large white flowers stained with rose, and highly

scented, both from Messrs Rollisson & Sons ; to Amaryllis Rembrandt, a finely formed dark crimson variety, from C. Keiser, Esq. of Broxbourne ; to *Acer palmatum sanguineum*, from Mr W. Bull ; to Azalea Sir Robert Napier, of a bright deep-red hue, the flowers small but very striking, from Messrs F. & A. Smith of Dulwich ; to Show Auricula Mrs Mendall, a fine white-edged variety ; and to Alpine Auriculas Wonderful and Novelty, the former a most striking and beautiful flower, all from Mr Turner of Slough. Second-class certificates were awarded to *Primula cortusoides amœna*, and to *P. cortusoides striata*, the last a charming variety of *amœna*, with more white in the eye than is usual, from Messrs Veitch & Sons.

In addition, Mr Noble of Bagshot furnished some beautiful seedling Clematises, apparently seedlings from *C. Standishii*, some three or four of which would have received certificates had they been named. Mr B. S. Williams, *Thrinax nobilis*, a very handsome Palm, to be seen again when larger ; Mr W. Bull, *Viburnum Sieboldi*, in bloom ; Mr A. Parsons, Danesbury, Azalea Magenta Queen, with a good infusion of this desirable hue of colour ; and Messrs Downie, Laird, & Laing some excellent specimens of their fine gold and bronze Zonale *Pelargoniums* Countess of Kellie and Kentish Hero, the former fully sustaining its first-class character, being even in better condition than when awarded a first-class certificate.

R. D.



THE POLYANTHUS—HYBRIDISING.

I MAY be too late for this season in some of my remarks on the culture of the Polyanthus, but as I write not for those who are adepts, but to incite others to take up the culture of this first gem of the season with which fair Flora decks her brow, I will say that I have always found knowledge in advance of practice to be as useful in floriculture as in any other science ; and for my part I prefer making myself well acquainted with my lessons before I begin operations.

New varieties of the Polyanthus, indeed of all florists' flowers, are raised from seed, and in fertilising them the experimentalist may vary his operations according to his taste, judgment, or requirements. If size be wanted, take Buck's George IV. for the seed-bearing parent, if refinement, Saunder's Cheshire Favourite, and impregnate them with the pollen from a flower containing such properties in colour or marking as you wish to impart. The *modus operandi* is as follows : Take a strong truss of the variety selected for the purpose ; remove the small pips, leaving five or six to be operated upon ; take out the anthers with

a pair of small forceps or tweezers as each pip opens ; when fully expanded collect the pollen from the best pips of the variety selected for that purpose, with a camel-hair pencil that will not scatter it ; introduce it into the tube and forcibly turn it round upon the stumps of the removed anthers ; repeat this process several times ; cover the truss with the piece of glass mentioned before, to keep wet or insects from injuring the fertilised pips, and nature will work her own way.

When the seed-pods are turned brown, and just about to open, gather them ; store them in a dry place until you sow them : the best time for this is probably in February. Fill some boxes, pans, or shallow pots to within one inch of the top with rich garden mould, then sift or rub half an inch of very fine soil, and sow the seed ; only just cover it with fine sifted soil, water with a small rose pot, and take care never to let the seeds get dry after they begin to germinate ; when the seedlings are large enough to handle, transplant them in a shady border, free from drip, about three inches apart ; attend to watering and top-dressing, and in due time this labour will be rewarded by the appearance of some "gems of purest ray serene."

I will just mention a method I have adopted as a temporary shade, and I find it well adapted for a sunshade during the summer months. On the back of the short stake in which I fix the piece of glass for protection to the bloom, I hang with a single tack a piece of perforated zinc, about five inches by seven ; this admits a free circulation of air, and prevents the rays of the sun striking directly upon the plants.

DERA.



NOTES ON HARDY HERBACEOUS PLANTS.

CENTRANTHUS RUBER.

THIS is a very excellent hardy herbaceous plant, and an old inhabitant of British gardens. It is originally from the region of the Mediterranean ; but having strayed from cultivation, and become naturalised in some parts of England and Ireland, it now finds a place in the flora of Britain. There are two or three varieties of this plant—a white, a purple, and a red or crimson—and there may be more, but they have not come under my observation. Individual taste will guide in the selection of the colour ; but it should be borne in mind that the purple is not very distinct, the white is dingy, and neither of them, for ornamental purposes, can be regarded as improvements on the original crimson. The plant forms a rather dense tuft of somewhat glaucous leaves around the base of the flower-stems,

which rise to about 2 feet high if the plant is vigorous, and are terminated by a bold handsome panicle of numerous small flowers. It blooms in June, and continues long; and perhaps not the least beautiful feature, as it is certainly the most interesting one, is the elegant pappus-like calyx which adheres to the fruit in maturity. A large patch of *Centranthus ruber* in a mixed flower-border is a very beautiful object. It should find a place in every collection of ornamental herbaceous plants. It is easy to keep, and very accommodating as regards culture, requiring only well-drained soil moderately rich to develop it to perfection, and occasional lifting and cutting-in to keep the centre vigorous, which is apt in a course of years to become weak if this is not attended to. I have seen it planted on the crumbling walls of an old ruin with very good results; and it is an admirable plant for planting on rockwork. *Centranthus calcitrapa* and *C. macrosiphon* are annuals more curious than ornamental; but *C. angustifolia*, a perennial reported from the south of Europe, but which I have never seen, would, if really distinct from *C. ruber*, be an acquisition, and ought to be looked after.

VALERIANA DIVICA.

This is of the same natural family as *Centranthus* (Valerianaceæ), but for the purposes of the gardener it is a very distinct and pretty plant. It has no bold or striking characteristics to recommend it to notice; it is a simple lowly-creeping plant, throwing up many small corymbs of pink flowers to the height of 6 or 7 inches. It is in flower in May, and lasts about two months. This Valerian is very useful for planting in wet places, where not many ornamental plants of the herbaceous kinds will grow; but though wet—even marshy—ground is what it prefers, and thrives best in it, it is not wholly averse to other and nearly opposite conditions. It succeeds very well, and makes a very neat plant, in the front line of a mixed border, and is also available for the ornamentation of rockwork; but in all dry or ordinarily dry positions it is the better of a little shade: it should therefore be placed on the shady side of a rockery if so used. There are a good many Valerians, bold, striking plants, well adapted to introduce into semi-wild places in woods. For such purposes I would instance *V. sambucifolia*, with white flowers about 3 feet high, and flowering in July and August; *V. Pyrenaica*, having pink flowers about 3 feet high, and flowering in August and September; *V. phu*, flowering about the same time as the last sort, is of the same stature, but the flowers are white; and *V. officinalis*, having pale pink, sometimes also white, flowers, blooms about June and July. Such plants as these introduced into open woods and moist situations would make these places more

attractive. The Valerians are rather a large family, but only five or six species are to be found in gardens or nurseries at present—that is, not including the three British sorts, *V. divica*, *officinalis*, and *Pyrenaica*. I have not seen in living plants any Valerians but those dealt with above; but from what I have seen in the herbarium of many of the dwarf species, I have no hesitation in advertising them “wanted;” and no doubt they will be found when a demand is created for them. Among those noted as apparently especially worthy for the decoration of rockwork and for the front lines of mixed borders are the following: *V. supina*, pink, 6 or 8 inches; *V. elongata*, yellow, 6 or 8 inches; *V. montana*, red, a foot high; and *V. saxatilis*, white, about 8 inches high. These are natives of various parts of Europe, and are consequently accessible.

W. S.

VISIT TO GARDENS IN FIFE,—GRAPES AT PITCAIRLIE, &c.

It is always interesting as well as profitable to gardeners to visit others in the profession who are more successful cultivators than themselves. Led by these notions, we have (accompanied by three gardening friends) for several years paid visits to the gardens at Pitcairle, early in the season, with the view of seeing the famous graperies there when they were at their best.

On the 21st of April we drove out on our annual excursion. Early in the day we were passing rapidly through the Howe o' Fife, a district famous as one of the finest for agricultural purposes in Scotland. Leaving the ancient town of Falkland with its fine old palace on the left, intending to visit the gardens there as we returned southward, we went some distance out of our usual route to have a passing glance at the orchard-house in the gardens at Kinloch, the seat of Mr Kinnear. That gentleman we have often heard of as one whose pomological skill is second to few in Scotland, and the skill he has displayed in fruit-growing in pots is far ahead of the miserable examples we often meet with in various parts of the country. We expected to see this system of culture done well at Kinloch, and our anticipations were more than realised. After entering the small but orderly kitchen-garden, we soon found Mr Seth, the industrious gardener, who was ready to show us all he had under his charge, unveiling every secret which attended success, as well as pointing out where experiments had been tried which only gave moderate results. Passing through a range of vineries where the Vines had been either renovated or replanted, we were struck with the fruitfulness and vigour of the Vines.

Every shoot was showing several bunches of large size. The wood was firm and the leaves immensely large. In a late house which was planted last year the Vines were in fine condition. In the middle of the house young Vines had been planted for a temporary purpose, which were heavily cropped, and to be rooted out when the permanent Vines were established, thus always keeping the house well employed. The heating power in these houses was immense ; pipes were laid along the front, middle, and back, as well as a flue in the back wall. A high temperature can thus easily be kept up with very little fire and no scorching feeling experienced, as when pipes are few and have to be made very hot to keep up the temperature. We next passed through a span-roofed house, which had been erected over two trained Pear-trees ; but the experiment not giving satisfaction, Peaches have been planted at the sides, and are being trained up under the glass to occupy the whole structure. Turning to the right, we entered the house (or rather pit) where the fine fruit is grown in pots, and for the first time we saw justice done to this system of fruit-growing. We looked with astonishment at the enormous clusters of Pears and Plums on the bushes, almost ready for thinning. The foliage was large and unusually healthy. The trees were very dwarf, and their depth and height nearly equal. The pots stood on a cool surface below the garden level, and were neatly bound round with straw or hay ropes ; a piece of zinc was placed round within the rims, about 2 or 3 inches deep, and filled up with a quantity of cow-dung and earth well mixed, which, by watering over this, gave a regular supply of nutriment without souring the soil about the roots. The house was low and flat, going down several steps to enter it. A friend who was present (and no mean judge of orchard-house management) has been in the habit of visiting this place for more than fourteen years, and seen the trees and fruit in all stages, and they have during that time been always the same, producing Pears equal in size to the fine fruit which are grown in France. We have had opportunities of seeing fruit-trees in pots exhibited in London and elsewhere, as well as visited some of the famed places where great expense and attention are given to orchard-houses, but all we had previously seen were miserable examples compared with those at Kinloch.

We left this place gratified with what we had seen, and the thought occurring to us that it is not always in noblemen's places alone that good gardening should be looked for. Great extent and means produce great things, but small means well applied sometimes give great results. We drove to Pitcairlie, the seat of Mr Cathcart, which is snugly embosomed among the Ochil Hills. A stranger might pass this sequestered spot without ever supposing that anything like horti-

culture was carried on, did not a tall brick chimney in the distance show itself over the tops of the trees, which is a useful agent for taking the smoke away from the forcing-houses,—drawing nearer, a number of the finest glass structures in Fife are full in view. Passing through the beautiful model farmstead, we soon reached the gardens, where we met Mr Laing, the very successful gardener, who conducted us to the principal range of vineries, four in number, with a span-roofed conservatory in the centre. Entering at this plant-house, which was gay with many specimens of flowering plants, we passed into the Muscat house, which presented a sight we will not soon forget. The Grapes were stoning, no small stoneless berries were to be seen, the bunches were very large, compact and well formed, and hanging so thickly through the house as almost to touch one another; the wood was strong and firm, and the leaves unusually large and strong—many of them from 16 to 18 inches across; we believe it is no uncommon thing, when the foliage is fully developed, that many of the leaves measure 20 inches across. We counted several Vines, their length being 15 feet, with 20 and 22 bunches on each, and we supposed none of them carried less than 18 bunches per rod; the weight of bunches would average from $2\frac{1}{2}$ to 4 lb. each when ripe, though in these vineries Hamburg bunches have often been cut weighing from 5 to 7 lb. each, and no shanking ever seen. The next house to the Muscat is used for late work, being chiefly filled with Hamburgs and Lady Downes. The promise here was also extraordinary, wood and foliage very fine, one shoot bearing a heavy bunch we measured, and the girth was $2\frac{1}{2}$ inches; the kind was named White Hamburg, but it appeared to be no other than the Marchioness of Hastings. We do not remember ever seeing such wood and foliage on Vines before, except at this place; heavy cropping seems only to keep these Vines in bearing condition, as many large bunches are cut off as soon as they are formed every season. Retracing our steps through the conservatory, we entered the first of the early houses, chiefly Hamburgs, with a few Frontignans and others; much of the fruit was ripe, and some had been cut. The bunches here were even larger than in the Muscat house, and the crop as heavy. The berries were large, and the most of them well-coloured; the wood and foliage also very strong. The next house adjoining was in close succession to the earliest; the kinds were chiefly Hamburgs, black and golden, with some Black Prince and Black Muscats; the latter bunches had a few small stoneless berries, but the bunches were very large, being widely shouldered and some of them nearly 15 inches long. These vineries when we visited them were worth going a long distance to see. Where the great success lies, or from which cause, we do not pretend to guess, but we have never

before seen such extraordinary Vines on the whole. We have visited the famous vineries at Oakhill, Finchley, Heckfield, and many others where competing men had the management ; but for such extraordinary crops, strong Vines, and large foliage, those at Pitcairlie stand in the front rank. We inquired at Mr Laing of what his borders were composed ; his reply was, "Just a wee pickle earth from the tap o' the hill." The borders are said to rest upon a rock which forms a terrace, in front of which is the well-managed kitchen-garden. We saw a quantity of the soil in a heap which had been prepared for a large span-roofed house, which had formerly been for plants, but was now converted into a vinery ; the Vines being lately planted were making fine growth ; the soil seemed to be slightly mixed with peat, heather was plentiful amongst it,—it reminded us of the soil which the large consignments of Camellias are growing in, which arrive from the Continent to the great London nurseries annually ; but whether success is from the "wee pickle earth," the rocky foundation, the terrace, or these all combined with Mr Laing's skill, we leave to others to determine.

We know it is no uncommon thing with young Grape-growers to go on for a few years producing wonderful crops of large ill-coloured bunches, with flavour enough to blister one's tongue, and in the end to finish up with bareness. But the Vines at Pitcairlie have been at work for nearly a dozen years, producing crops every season as at present ; we are told they were allowed to bear heavily the season after they were planted. There are many other glass structures (behind the garden wall on rising ground) for the growth of Figs, Cucumbers, Melons, Pines, &c. ; a long range in four divisions is used for Peaches and Plums. We left Pitcairlie under the impression that we had yet much to learn and also much to unlearn ! Taking our course through Auchtermuchty towards Falkland, we soon reached the palace gardens. It occurred to us as we entered this kitchen-garden that Cabbage, Leeks, &c., growing around this fine old building, were much out of character. Ferns, Coniferæ, &c., would, we think, do more honour to this place teeming with historical interest. We passed down to the north and lower part of the garden, where stand the glass houses, which are in as bad a position as those at Pitcairlie are in a good one. The great difficulty with fruit-culture here is caused by the Lomond Hill, which rises to a high peak in front of the garden, obscuring the rays of the sun for several months of the year. Notwithstanding these barriers, Mr Fowler has for a number of years (by lifting the roots of his Vines and using lighter and drier soil and giving extra drainage) secured heavy crops of Grapes, and at the time of our visit the Vines were very promising. Greenhouse

plants are done well here. We saw many fine specimens of Azaleas, Heaths, and Epacris in vigorous health. A high wall on the east side of the garden was well clothed with fine young Pear, Plum, and Cherry trees, many of them promising well for a crop. Near the end of this wall stand the ruins of the tower, within which the ill-fated Duke of Rothesay is said to have breathed his last; according to tradition, he was starved to death by those who at one time professed to be his friends, but were actually employed to betray and put him to death; the Duke of Albany had this crime laid to his charge; his ambition to grasp the crown led him to the diabolical scheme. We left the tower, passing through old ivy-covered ruins till we were in front of the old palace, which is still in excellent preservation. It was here that King James V. died; after the defeat of his armies at Solway Moss he retired to Falkland and went to bed for the last time. Eight days before his death the unfortunate Princess Mary, afterwards Queen of Scots, was born at Linlithgow. Upon hearing the news, the dying King exclaimed, "It (meaning the crown) came with a lass and it will go with a lass." A monument in front of the palace stands in commemoration of the late Mr Bruce, whose kindness and benevolence to all around him have become as household words among the inhabitants of the surrounding district. Besides being a philanthropist in every sense of the word, his taste was of the most refined character, as is shown by the beautiful church erected at his own expense, and the beautiful mansion of Falkland, which is one of the most elegant north of the Forth. The pleasure-ground, made up the side of the Lomond Hill, is a masterly piece of landscape-gardening. We cannot say the same of the flower-garden, which is an extensive one, very much exposed to every blast, and not easily managed; however, Mr Fowler, by using robust plants suitable to the locality, overcomes all difficulties and makes it one of the gayest in the county, and it is admired yearly by great numbers from all quarters. Mrs Bruce kindly allows the gardens to remain open to all comers.

M. TEMPLE,



THE POLYANTHUS.

"DERA" has done well to call attention to that old-fashioned early spring flower the Polyanthus. His cultural directions are admirable—simple, suitable, and will be successful if intelligently applied.

I also am a grower of the Polyanthus, having begun a few years ago with some fine seedlings, and I am now reaching a type of flower that

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I believe could hold its own against some of the named flowers. Named Polyanthuses are now rarely seen round London, though occasionally some plants put in appearance at the Metropolitan Spring Shows, but they are seldom *bonâ-fide* named varieties, but simply good seedling kinds named to do service on such occasions. I think the day for named Polyanthuses has passed away. They are, notwithstanding, very popular—they will always be so, and they deserve to be so; but they are now valued as decorative plants for the open ground in the spring, but with this qualification, that the nearer the flowers approach the florist's ideal of perfection, the more highly are they esteemed. That which the florist hoped for and laboured to reach—that ideal that he set before him, and with unvarying purpose sought to be realised, were as

“Hopes that have put forth green and vigorous leaves,”

and become translated into the popular taste; though the highest outcome of approximate perfection is but an earnest of what can yet be achieved.

A visit to that splendid place Cliveden, made just now, would amply repay any one if it were only to inspect some beds of seedling Polyanthuses Mr Fleming has in bloom. They are planted in a series of beds by the side of some of those fine walks that wind in and about the shrubbery and woodland adjacent to the house, where they are sheltered by the surrounding trees both from the effects of nipping winds and the effects of the sun. Here they literally riot in an abundance of rich leaf-soil, like a tree planted by the waters. Many of these flowers are of a high order of quality—some even better than a few of the named sorts I have seen occasionally exhibited. These flowers came from some seed I gave to Mr Fleming a year ago. I sent a packet of seed of a like character to the Editor of the ‘Gardener,’ and I hope he has been equally successful with Mr Fleming in raising good kinds. I got seed of this strain originally from that fine old florist Mr Lightbody of Falkirk, and from it I have annually raised seedlings with the happiest results. Still, perhaps “Dera” has something much better than I have myself, and I would like to get some named flowers from him if he will favour me with his address, or, failing plants, seed from some of his best kinds.

I find many persons fail to raise Polyanthuses from seed, though it is a very simple and sure process. I have sown seed both in the autumn and the spring, and never failed to raise it. Unless the seed is sown very early in the autumn, it should be sown in March or April, as the plants get nice and strong by the blooming season. The bed on which the seed is sown should be under a north wall, and be

covered with glass or some such material. If sown in a box or pan, or in pots, the same shady position should be given them, and they should be covered with glass and kept moist. I always sow in 32-size pots, covering each with a piece of glass, and never allowing the soil to become dry. A soil composed of sand, loam, and leaf-mould answers admirably. The seed will speedily germinate, and when the plants are large enough to handle, they can be transplanted into boxes, or to an intermediate bed to which shelter can be given, placing the plants pretty close together. In the autumn the plants can be removed to the blooming beds, regard being had to those excellent directions in regard to planting given by "Dera" last month. Let any one who has experienced difficulty in the way of raising Poly-anthus-seed but adopt this plan, and the most gratifying results will follow.

Quo.



HINTS FOR AMATEURS.—JUNE.

MUCH of the winter supply of vegetables depends on the preparation made this and following months. If the plants are allowed to become drawn up weakly in the beds, and thrust into badly prepared ground, not placing the soil with dibble at roots, but pressing the neck of the plants instead, or allowing them to stand in soil dry as dust without any water, neither good quality or quantity of crops need be expected at the proper season. Therefore we would advise planters to lose no time in getting Broccoli, Brussels Sprouts, Scotch Kale, Cabbage, Cauliflowers, &c., in their proper quarters as soon as the plants are strong enough, and if they have been made sturdy and dwarf by pricking them out before planting, so much the better—they will stand the attacks of vermin with more certainty. Wood-ashes and a little soot placed in with each plant, when planting is going on, keeps grubs, &c., in check. Watering twice or three times with clear lime-water is a preventive from the ravages of slugs. We prefer drawing drills, as for Peas, when planting all the Brassica tribe. The dry surface soil is thus drawn aside; besides, when the plants begin to grow and the hoe is passed through among them, they receive a kindly "earthing up" which helps them against wind. Keep all kinds of crops as much together as possible, to allow the proper working of the garden when the ground has to be cleared and prepared for other things. Brussels Sprouts in their succession, Scotch Kale, and late Broccoli may be kept next Leeks, so that large breadths may be cleared off and turned up same time; autumn Cauliflowers, earliest Broccoli, and early Savoy may be kept

in quarters adjoining one another. As soon as crops are ready for thinning they should have prompt attention ; and if seed has been sown too thickly, it would be well to pull out patches of the plants as soon as they can be handled—the air thus circulating among them would prevent drawing and weakly growth. This applies chiefly to Beet, Turnips, Parsnips, Onions, and Lettuce. Beet may be left 6 to 12 inches apart, according to the earliness and lateness of the crop. The thinnings may be used to fill up spaces where the crop is too thin, or making fresh plantation. Turnips require more room after this season ; and sow for a general crop. Parsnips will become diseased at their tops, especially if the season is wet, if they are not well thinned. Onions sow for drawing young, and thin the others, using a strong old knife or worn-up chisel, so that the young plants may be lifted without breaking them, especially if they are to be planted to help the late supply. Lettuce may be thinned out and a good breadth planted in a cool and rich position ; they will not go so quickly to seed now, especially in the northern and late localities. Carrots are a very uncertain crop, and if fresh ground can be spared, it is a safe plan to keep up small supplies throughout the season by sowing a few Early Horn every few weeks, the principal crops are so liable to the attack of grubs ; dustings of soot and guano are useful when given in showery weather, but the latter has to be used with great caution. When the crop is thinned out, say from 6 to 8 inches apart, a mulching of short litter or grass is an excellent preventive of vermin. We gave this a thorough trial last season, and had excellent Carrots where the surfacing was given, but the rows which were left alone were useless by the month of August ; we used grass from the lawns. After they are thinned a good hoeing should be given to keep an open surface, which acts against drought. This is applicable to every crop.

Sow Beans and Peas for late crops as formerly directed ; mulch them on each side of the rows ; this and deep ground (away from the shade of trees, &c.) will prevent mildew. Good soakings of water may be given with great advantage, but frequent dribblings is a great evil, which only stunts the crops and causes premature seeding. Stake Peas before they fall over or can be beaten about by wind. If stakes are scarce, with good strong rods fixed firmly in the ground and strings passed along from rod to rod on each side of the Peas they can be secured. Sow Cabbage now to give greens in autumn and early winter. Coleworts are valued very much by some at that period when good Cabbage can hardly be got. We often secure good crops of the small hearting kinds throughout early and middle winter ; these kinds heart quickly and are easily protected. Sow more Parsley for winter ; on a ridge is a good position to keep a good supply in winter, or under a

wall or hedge, sheltering it from easterly winds. Celery now may be planted out for the main crop as formerly directed, and early crops can have a little earth, say an inch or two, thrown over the surface of the roots to act as a mulching and keep scorching sun off the roots. When watering is performed, carefully avoid dribblings, as the end in view will be frustrated by a crop of Celery running quickly to seed. When planting carefully avoid squeezing the roots firmly into balls, an old absurd practice. Allow the roots to lift as much of the manure they have been pricked out on as possible, neither breaking them off nor twisting them. If Asparagus is bearing, and good crowns to be prepared for next season's supply, dustings of salt may be given; guano is also good for this purpose, but when given late in the season induces growth and prevents the crowns from ripening, so that they cannot stand a severe or very damp winter. Capsicums and Chilies, if they have well filled their pots with roots, may be well soaked frequently with manure water, clear. This is also applicable to Tomatoes grown in pots. It is a general practice to stop the latter, keeping them like bushes. This should only be done where there is not room to allow them to grow upwards. The flowers (which appear at every joint in the main stem) may be thinned, leaving the largest and best exposed. Thinning the fruit when in a young state will allow those left to grow to a large size. Cucumbers and Melons growing in frames may become matted with laterals if not looked to frequently; thus causing the fruit to damp off in its early stages. A close high temperature is injurious in the same way, and is conducive to disease. Cucumbers in dung-beds require less watering than where heat is from fire; but a good soaking of tepid water twice a-week where active growth and fruiting is going on, will generally be enough. Melons require greater care and generally less water (except when they are grown in pots). When in flower and setting the fruit, air and a dry atmosphere are essential, and if water unavoidably has to be given at roots, draw the soil back in places and cover over the moist parts. If woodlice are troublesome, toads and shallow pans with treacle in them will thin the pests. Keep up steady heat night and day, allowing a great rise with sun, say 70° at night with a breath of air on, and 85° when sun is strong; this will be safe. Encourage Vegetable Marrows and Ghirkins to start freely into growth by sprinkling them lightly and shutting the hand-lights close early in the afternoon and covering up when nights are cold.

Fruit-trees on houses and walls must be kept free of insects by frequent applications of the syringe. Where Apricots, Peaches, and Plums are advanced in growth, keep the fruit well exposed to sun and air; thin gradually as many may yet fall off. Keep the growth of the

tree equal by stopping gross shoots in time and giving weakly growth a chance of gaining strength. Keep each shoot clear of its fellow; thin out the wood by going over the trees frequently and taking everything off which may be growing out from the wall. Natural spurs on any trees when close to the wall are always certain to be well studded with fruit-buds; they should be preserved. Young trees lately planted should be systematically trained at the beginning by taking the wood to form the main branches in the right direction and quite straight. For instance, the bottom shoots may be trained quite straight right and left within a foot of the ground (nearer than this the fruit is likely to suffer from dust and sand). The next shoots may be taken in rotation like a fan or like the spokes of a wheel, allowing them to start sharp from the base. Side shoots from the upper side may be kept as the bearing wood, which can be cut out and replaced yearly with a shoot left near the main branch. The walls can thus be easily covered and pruning made very simple; as when the one shoot has done its work another falls in rank. The same nails can be kept in the same place as long as they last, and the trees not disfigured with cloth, small ties doing instead. The most of pruning and regulating should be done in the growing season, stopping shoots where they are to be cut in winter, which helps to mature the wood, and is likely to leave wood-buds to lead up sap to the flower-buds the following season. When there is no leading wood-bud, three-fourths of the shoot is often rendered useless. Pears and other trees require to be gone over, taking off watery shoots and stopping young wood close to the wall to form fruit spurs. The worst practice for insuring quantities of wood instead of fruit is by taking off large quantities of shoots at one time, keeping the tree always growing, thus preventing the fruit-buds forming.

Pinks, Picotees, and Carnations will require staking as soon as the flower-stems make growth, and where large flowers are wanted few should be left to each stem; seed may also be sown to form new plantations. The propagation of Pinks may soon be attended to by putting in cuttings (pipings). The shoots round the bottoms of the stems should be taken off about 2 inches long, and their lower leaves stripped off; plant in good light earth with a little sand over the surface; shape with a top of a hand-light, plant the cuttings in thickly, and place hand-glasses over them, and shade from sun. They do well where the morning and evening sun reaches them. Hollyhocks, Dahlias, and all herbaceous plants require staking as they make their growth to keep them safe against wind. Hyacinths, Tulips, and all bulbs should be taken up and placed in sand as soon as their foliage turns yellow; when the bulbs are ripe they may be stored away in

dry quarters. Auriculas keep in shady positions. Keep their drainage in good order, and if heavy rains are kept off them so much the better. Chrysanthemums keep well topped for some time to come; shift the plants on from size to size of pots as the roots appear through the soil; those to be grown in borders facing the sun to be lifted in autumn, should be planted out in holes in firm ground, using good soil when planting them. Where it is an object to save labour and time, planting-out has great advantages. Pansies are liable to have their colours destroyed by the sun, therefore shading is necessary. They require plenty of water. Balsams growing freely must not be checked if large plants and fine flowers are required: shift them as soon as their roots show through the soil, give liquid manure freely to those coming into bloom; they require much water at roots: most plants are better by being watered in the evening at this season; give air liberally, and to have plant-structures interesting at this season, all the inmates must be kept in good form, free from weeds and bad leaves, and not crowded together. Cytisus, Myrtles, Acacias, and other similar plants done flowering, may be well pruned in keeping an upright centre; and when they begin to grow they may be shifted into larger pots or reduced at their roots, and potted into good soil (peat, loam, and a little sand), using pots of the size they were in, made thoroughly clean and well drained. Plants can thus be kept at the same size for years. All plants in windows require plenty of water, their surfaces kept clean, fresh soil given as a top-dressing, and well sprinkled overhead to refresh and keep the plants in health.

M. P.



ON POTTING PLANTS.

ABOUT the commencement of this year I was interested in getting an appointment in a good garden near London for a promising young gardener, and solicited the patronage of an old friend in the interest of the young man. I had a favourable reply, and was requested to state what the said young gardener "could do at the potting bench." This led to some interesting correspondence on the subject of *potting*. My friend frankly informed me that our "country potting" would not pass in the London market, and that young men from the country often caused much loss in valuable plants by careless potting. This, if true, is a serious charge against the "country," and is well worth consideration in the pages of 'The Gardener.' There is no doubt that in many gardens quantity is more considered than quality in potting.

For one man to pot 500 plants per day the potting must not be too closely examined. We hear of such high-pressure work being required. In large establishments with flower-garden demands, the potting is enormous; and this has a tendency to train the hand to speed, rather than to inquiry whether the manipulations are in accordance with what will produce the continuation of the most perfect health and development of the plant in pot.

Potting is an operation easily performed, but the principles of potting, or the proper treatment of plants when potted, is not so well understood as it ought to be. The vast number of inferior specimens which are passed by without remark, even at horticultural exhibitions, bear witness that plant-culture in pots is far from the standard to be desired. A plant in a pot is in the extreme of artificial culture. Many are heard to say that roots are often *burnt* in the pot, but there is less note taken of the extreme *cold* to which the roots of plants in pots are subject to from evaporation and currents of air passing round the pot; this in a large degree accounts for limited success in pot-culture. And again, there is a constant agitation between dryness and moisture. "Flagging" is a well-known sign of dryness, but plants will frequently flag after an excess of moisture. When all this is taken into consideration, it is not surprising that we often suffer disappointment in our pot-plants. Skilful manipulation in potting has the greatest influence even in the commonest pot-plant; but it is in the fine-rooted and delicate plants, that cannot endure the extremes of drought and moisture, and consequent violent excitement, that first-rate potting is so conspicuous.

Any one acquainted with the plants cultivated and exhibited by Mr Turner of Slough, must have always seen something quite excellent in them. I believe potting is a chief element in the producing of such compact form and abundant flower as Mr C. Turner is such a master in exhibiting. When I visited the nurseries at Slough, I did not see, in houses or treatment, anything much different from what is to be seen in like establishments; but in the potting-shed I saw work, the clear index of the uniform excellence of the plants cultivated at Slough.

It is now some twenty years since the *one-shift system* marked an era in plant-growing about London. It was about that time that Mr Goode, then gardener at Ealing Park, made greenhouse plants grow more in one year than other gardeners could do in three or four years. Large pots and rough material were the great idea of the one-shift system, but more than this was done to force up growth at Ealing Park. The plants at that time were grown in temperatures far above the common standard of good gardeners; and the result was, as is

now well known, there was a breakdown in the grand plants every two or three years. The system by which Mr Goode produced such remarkable plants was empirical, and did great credit to his experimental skill, but could not succeed in common pot-culture, as it was not based upon the natural laws which balance root and branch. I cannot now go farther into this matter to prove that the one-shift system, as carried out by Mr Goode and others, produced tissues too gross at once for symmetry and beauty in *pot-plants*, and is not applicable to the common order of culture. The most important lesson got from the *large-shift* was the value of rougher material in potting, and good drainage.

In potting plants, authors of earlier times recommend *fresh soil* and *small shifts*. Sound advice this, and suitable for the good culture of three parts of the pot-plants now cultivated in private gardens. It is not so easy to understand why gardeners of the last generation *sifted* soil for all pot-plants; was it to favour the multiplying of fine roots, as now done in our cutting-pots?

We have heard the Editor say that the culture of pot-plants is not improving; mere size cannot, and should not, be the chief aim of a plant cultivated in a pot. I think this an error of pot-culture, and I am sure the Editor will gladly aid in giving advice of what should be the leading points in the culture of pot-plants in private gardens.

The art of potting is of the first practical importance to every young gardener, and is not sufficiently attended to.

CHAS. M'DONALD.



W. DEAN'S PATENT FUMIGATOR.

THIS most useful apparatus has been invented by Mr Dean, nurseryman, Shipley, Yorkshire, and we depart from our usual course in such matters to call the attention of all who have any sort of erection for growing plants to it.

A lady some time ago wrote us to the following effect:—"I had green-fly on my Geraniums and Calceolarias; I was advised to fumigate the greenhouse with tobacco-paper. I got a man to do it. He put some red-hot cinders in a flower-pot and the tobacco paper on them, set the pot in the house, and shut the door. The paper soon kindled into a flame. The pot flew all to pieces, and next day there was scarcely a green leaf on my plants. What am I to do with them?" We believe this is by no means an uncommon case with amateurs, and even with others who have more skill. To all such we say, Get Dean's Fumigator, either direct from him, or through your own nurseryman. Birket's Fumigator is the only one we have hitherto seen, but Dean's is a great improvement on it, which requires to be regularly cleaned,—not a very pleasant operation. By removing the feeding cylinder and placing the nozzle through an aperture in the glass, the operator can stand outside and fill the house with smoke with the greatest ease. If the house is large, apply the fumigator first at one end, then at the other.

THE LOQUAT.

[FROM JOURNAL OF HORTICULTURE.]

It is to be regretted that Mr Bateman, in his lecture on May 5th, as reported in your columns, did not go more fully into the culture of this fruit. The best description of it is to be found in Loudon's 'Encyclopædia of Gardening,' where also may be read an account of how the trees were managed at Lord Bagot's. It was, I think, hoped and expected that Mr Bateman would have thrown some new light on its culture. There is no doubt about the excellence of the fruit when grown in a climate suited to it. A friend who lived in St Helena some years, reports it as being peculiarly excellent there. As grown in the south of France it is said to be good, but I have only eaten it when preserved in syrup; in which state it has not the least flavour, but is merely a lump of sugar with two or three stones enclosed.

Some years ago I was much interested in this tree, which is one of the noblest of evergreens, and I found that the trees raised from seed, which may be done with great facility, would take a lifetime before they would bear fruit in this country, and under the artificial treatment here practised. The best mode, I soon found, was to graft scions, from old trees if possible, on strong stocks of the Whitethorn (*Cratægus oxyacantha*), growing in the open air, and then to put them into large pots by the end of October. The stock should be stout, and if as stout as a small broomstick all the better. The grafting and the confinement of the roots to the pot soon make the tree ready to bear fruit.

The best method of grafting is that called rind-grafting, which is done by paring the graft very thin, and then inserting it between the bark and the wood; this is best done in April, towards the end, when the bark rises freely. As the leaves of the Loquat are large, they should be removed, with the exception of those at the crown of the shoot. The grafts should then be firmly bound as usual and clayed, binding some moss over the clay; or a better practice would be moulding the stock and graft up to its tip with cocoa-nut fibre. If the weather be hot and sunny the grafts should be shaded for a week or so, by placing a flower-pot over them, tilted up on its northern side. Loquats may be grafted even now if stout stocks could be found. Some of the ends of the shoots from the tall naked-branched tree now in the conservatory at South Kensington would make excellent grafts. By the end of October the grafted trees may be taken up and potted, or planted out in a house prepared for them. If they have made vigorous growth they will soon make bearing trees if properly treated, and the treatment required seems at present not very clear.

The account given in Loudon's 'Encyclopædia' of Lord Bagot's mode of treatment is very interesting, but in my opinion the Loquat should not be considered a stove plant; for as it grows and bears freely on the shores of the Mediterranean with a mild winter and hot summer, I see no reason why it should not ripen its fruit here in a climate under glass approximating to that of the above localities. It therefore seems to me that grafted trees should either be grown in 18-inch pots with a rich compost, or planted in the borders of a well-ventilated orchard-house, fitted with hot-water pipes to give the temperature in winter necessary to their well-doing.

The routine culture should be as follows:—From the 1st of June till the last week in October the house should be open night and day, the trees being watered and syringed as required. From the 1st of November and all through the winter the minimum temperature should be 50°, thus imitating the climate of, say,

Hères in the blossoming season. During March, April, and May the same gentle artificial heat should be continued. This, with the occasional high temperature which sunshine will give, will ripen the fruit, and free ventilation without artificial heat during the summer and autumn months, during which the temperature of an orchard-house ranges from 70° to 95°, till the 1st of November, will give health and strength to the trees, so that they will blossom in December, and set their fruit freely.

The Loquat is such a magnificent evergreen, independent of its pleasant fruit, that it is almost worthy of a house being devoted to its culture; but this need not be, for if some of our best kinds of dessert Oranges are planted with it they will succeed, and ripen their fruit in great perfection. As a preserve in syrup the Loquat is merely a vehicle for sugar, and has no peculiar flavour; if bottled and preserved without sugar it would retain its agreeable acidity, and be an excellent fruit for tarts.

In selecting trees for cultivation, care should be taken not to plant trees raised from seed, but those grafted either on the Pear or Whitethorn. If possible, a good free-bearing variety should be selected, as they, like all our cultivated fruits, are apt to differ, as far as I recollect and have heard, not only in the size of their fruit, but in their bearing qualities.—*MESPILUS*.



REVIEWS.

FATHER FERNIE, THE BOTANIST: A Tale and a Study; including his Life, Wayside Lessons, and Poems. By JAMES NICHOLSON, Author of 'Willie Waugh,' 'Kilwuddie,' and other Poems. Porteous Brothers, West Nile Street, and Wm. Niven, Eglinton Street, Glasgow.

The volume before us contains a vast deal of useful and interesting information about our native plants, conveyed in a racy readable conversation between 'Father Fernie the Botanist' and his Pupil. Just the sort of book for such of our readers as are very ignorant of the nature, names, and properties of our native vegetation, and yet are anxious to learn, but cannot face the dry technical information contained in more advanced books on the subject of Botany. We give an example of the way the information is conveyed by our author:—

"PUPIL—I see a white flower peeping at us through the hedge; but that can't be the flower you allude to.

"FATHER FERNIE—No, it is still further down the river; but go and pull your white flower, and see what you can make of it: as for me, I know it already.

"P.—Well then let me see. I think it must be one of the Kail or Cress tribe, or what you would call the *Cruciferae*, from the cross-like arrangement of its four white petals; but the stamens will settle it. Yes, I see I am right, for here are six stamens, four long and two short, as in the Wallflower.

"F. F.—Now you see what it is to possess the key to each of the natural orders; and in this it is the more important, that this order of plants are all wholesome, and besides of no little medical value in the prevention and cure of scurvy.

"P.—Well, I begin to see that a knowledge of Botany is of no little value."

In addition to the solid information there are here and there snatches of poetry and anecdotes of an interesting character, bearing on the subjects in hand. We cordially recommend this interesting little book to our readers.

THE HORTICULTURAL DIRECTORY FOR 1868. Journal of Horticulture Office, 171 Fleet Street, London.

This work becomes more complete from year to year, and it is simply indispensable for all interested in horticultural matters, containing as it does lists of all our home as well as foreign nurserymen, all the seats of the nobility and gentry in the United Kingdom, with the names of the gardeners and of the nearest railway stations; lists of all public gardens at home and abroad, with the names of their curators; and of all horticultural and botanical societies, with the addresses of their secretaries, &c. &c.



Obituary.

It is with unfeigned regret we notice the death of one of the most promising young gardeners that ever left these shores for a foreign clime. We refer to Mr Gilbert Campbell, who recently relinquished his situation in the neighbourhood of Bradford, to take charge of a Tea-plantation at Cachar, in the East Indies. Mr Campbell was one of the most athletic and noble-looking young men we knew, yet he was cut down by cholera, *en route* to his destination, at the age of twenty-five. He was the son of our correspondent Mr Campbell, gardener, Castle Milk, near Glasgow. While in Yorkshire, he was a sergeant in the 2d West York Volunteers; and on the arrival of the intelligence of his death, the regiment held a special parade, marched to church, the band playing the "Dead March," where a funeral service by the Rev. Mr Mercer was conducted on the occasion—strong evidence of the esteem in which he was held by those who were most closely associated with him.



Notices to Correspondents.

AMATEUR.—You ask us to inform you which is the best way of keeping Apples and Pears during winter, so that they will not shrivel. In the first place, the fruit must be of good quality and properly ripened, and of such sorts as are good keepers. When gathered they should be laid out on the shelves of the fruit-room, on dry wheat straw. After they have been there for a month, pack them away in drawers that fit close, and look them over occasionally, and remove such as have begun to decay. Keep the temperature of the fruit-room between 35° and 45° if possible. We have seen Apples packed in casks with dry sand, and they have kept exceedingly well; and, strange to say, we have found an Apple fresh and sound amongst the wet leaves under the tree whereon it grew, after all its contemporaries had perished in the fruit-room. From this we infer the fruit-rooms are generally kept too dry and warm.

JOHN M'C.—The cause of the disease on your gooseberry bushes is, that a fly deposits its eggs in the leaves, as the gall-fly does in the oak leaves. To prevent this next year, note the date at which it appeared this year, and fourteen days earlier next year dust your bushes when the dew is on them with pounded hellebore, which you can get at a druggist's. This will keep the fly in question away, as well as the no less troublesome one that produces the gooseberry caterpillar.

We have the following letter from a correspondent; and as we are unable to answer it, we publish it, in the hope that some one who has the varieties of Polyanthus named to dispose of will make it known:—

"In the 'Gardener' for this month I see an article by 'Dera' respecting three Polyanthus, viz., Lord Lincoln, Cheshire Favourite, and Kingfisher. As I am a great admirer of this beautiful spring flower, I would esteem it a very great favour if you could kindly tell me where these Polyanthus can be purchased. If they are forwarded to me at once, I will send a post-office order by return. I know most of the leading nurserymen here, but few now keep the Polyanthus, or I would not trouble you."

A CONSTANT SUBSCRIBER.

A NOVICE.—We never saw either double Stocks or double Wallflower bear seed. If any of our readers have, perhaps they will let us know for the information of our correspondent.

EMMA.—The soil of your garden being heavy clay and near a river, snails are sure to abound. We advise you to keep a few ducks in your garden; they devour snails greedily. After an evening shower send round a boy to pick them up, just as they are turning out for an attack on your Peas and Lettuces. We have known thousands of them destroyed by sowing newly-slacked lime all over a garden during the night. You will no doubt sympathise with Hood in his

REMONSTRANCE WITH THE SNAIL.

Ye little snails, with slippery tails,
Who noiselessly travel along this gravel
By a silvery path and slime unsightly,
I learn that ye visit my pea-rows nightly
(Felonious your visit, I guess).
Now I give you this warning, that every morning
I'll strictly examine the pods,
And if one I lit on, with slaver or spit on,
Your next meal will be with the gods.

I own you're a very ancient race,
And Greece and Babylon were amid;
Ye have tenanted many a royal dome,
And dwelt in the oldest Pyramid;
The source of the Nile, oh, ye have been there;
In the ark was your floodless bed;
On the moonless night of Marathon,
Ye crawled o'er the mighty dead.
But still though I reverence your ancestries,
I don't see why ye should nibble my peas.

I have never disturbed your slender shells,
As ye hung round my aged walk;
And each might have sat till he died in his fat
Beneath his own cabbage stalk;
The hedgerows are yours with the meadow and brooks,
Ye may bathe in their dews at morn,
By the ancient sea ye may sound your shell,
On the mountains erect your horns;
The fruits and the flowers are your rightful dowers,
Then why, in the name of wonder,
Should my six pea-rows be the only cause
To excite your midnight plunder?

But now ye are forced from your dwelling to fly,
 So put on your liveliest crawl,
 And think of your poor little snails at home,
 Now orphans or emigrants all ;
 Utensils domestic and civil and social,
 I give you this evening to pack up,
 But if the moon of to-night does not rise on your flight
 To-morrow I'll hang each man-jack up :—
 You'll think of my peas, and your thievish tricks,
 With tears of slime when crossing the Styx.

POSTSCRIPT.

If thou canst not see to read this, furtive snail,
 Go ask thy friend the glow-worm for his trail.

—T. HOOD.

THE REMEDY.

As snails have no ears,
 And can drop no tears,
 Let those who grow peas
 Not sit at their ease,
 But lay down nightly,
 However unsightly,

Something or other,
 Whoe'er can discover,—
 Say a strong dose of lime,
 To burn up their slime,
 And send all such pests
 To their quiet resta.

—Not by HOOD.

J. C.—Your Vines are attacked by mildew—you have adopted the very treatment likely to produce it: you left off firing, watered the border well, and syringed the Vines every evening. Reverse all this; keep the house at 65° or 70° by fire-heat at night; keep it dry; sulphur the pipes, and dust sulphur on those leaves and bunches that are most affected. If you had sent us your address we would have given you an immediate reply, as in such a case time is everything. The mildew makes rapid progress when once it appears under the circumstances you describe. If you treat your Vines properly they will not have it next year, though they have it this.

VITIS.—The stock most undoubtedly influences the graft in the case of the Vine, not that we think it alters the flavour. According to our experience it changes the shape of berry, and either accelerates or retards the ripening of the fruit. At the present moment we have a seedling Vine inarched on the Black Hamburg, and the berries oval like the Muscat; on the Muscat, and the berries round like the Hamburg. So dissimilar are the shapes of the berries in these cases, that we are sure they would pass at any exhibition for two distinct varieties.

A. TROTTER.—The specimen you sent us was so shrivelled up that we could not examine it properly. We think it was an Arabis.

W. S.—There is no better or more profitable Pine for summer use than the Queen. For winter the Black Jamaica is the best flavoured; the Smooth Cayenne forms a much larger and handsomer fruit, and the flavour is very good if properly grown. Get 'The Practical Treatise on the Pine-Apple,' by D. Thomson, Archerfield, and you will get all the information you require; to give you such in our columns would involve the writing of a complete treatise.

VIOLET.—Your Viola cornuta went off in patches during hot weather last year. Your soil is probably dry and hot. Manure it with well-decayed cow-manure, and add some mellow loam, and it will do better this year.

THE GARDENER.

JULY 1868.



A GARDENER'S HOLIDAYS IN 1868.

HOLIDAY THE SECOND—AT MANCHESTER.



AID to me a friend, not floral, "Where do you propose to spend your second holiday?" And when I told him,— "Manchester!" he exclaimed, "what on earth have gardeners to do with Manchester? Are you going to contemplate the flowers upon their chintzes, the elegant bouquets upon their Turkey reds, or have you hopes of discovering the 'coal-black Rose' extolled in the songs of Christy? Do you suppose that the Lancastrians care for any tree but one, the Cotton, or for any other plant but their plant in trade?"

"You interest me," I replied, "as the little bittern or any other feathered rarity would interest an ornithologist. You must be almost the last specimen, the solitary scion left, of a class who in ancient days persisted in identifying commerce with barbarism—commerce having civilised half the world. I once heard an officer say that he never felt more ashamed of himself than when, a young subaltern, quartered at Manchester, he first went to return a call. The manufacturer of my imagination, he said, was a brief, bandy-legged individual, always wearing a dress coat, black satin vest, and gaiters—a man who never opened any book but his ledger, looked at a picture, listened to a song, or smelt a rose in his life. I found him, when I had passed through a fair garden, admirably kept—through a suite of rooms beautifully but quietly furnished, some of them having on their walls the best works of our modern painters, and one of them a library, filled from floor to

ceiling,—I found him in one of his hothouses admiring a most lovely Orchid, for which he had given fifty guineas ; and I knew in five minutes that he was a gentleman, high-principled, well-educated, and vastly my superior in brain. He took me to a morning room, guided there by the music of one of Beethoven's sonatas, and introduced me to his daughter. I had pictured to myself a dumpy damsel, with corkscrew ringlets, curtsying, and calling 'me 'Sir : ' I found the young lady who is now—my wife ! ”

“What have gardeners to do with Manchester ? ” Simply this, that, so far as soil and situation permit, the horticulture there is excellent ; and under glass we have no exhibitors more successful of orchideous, stove, and greenhouse plants.

To Manchester I went accordingly, over that fearful Dintin Viaduct, which carries you far above the chimney-tops of tall factories ; and arriving at the station, descried first signs of the floral spirit in three magnificent blooms on the wall, though not Wallflowers, and which, although only a pictorial advertisement of the Cheshunt Roses, seemed to offer a congenial welcome. In the evening I had an opportunity of admiring the more distant suburbs of the city, “ half garden and half town,” and never saw more careful culture, hedges more trim, lawns more level, beds more neat and weedless. The Rhododendron and hardy Azalea thrive vigorously in the natural soil, and there can hardly be a more charming collection than in the garden of Mr Greg, of Norcliffe Hall, formerly M.P. for Manchester. They who have seen the Rhododendron tents at Kensington and the Regent's Park, may represent to themselves a scene still more beautiful, because more natural, the grounds being, of course, far more extensive and diversified as to outline. In the softened splendour of the evening sun, and resonant with the vespers of singing-birds, it was a place in which a king might have told his love. Not being a king, nor a bachelor, my heart yearned for a cigar.

The gardener who is going to a flower-show wakes in the morning glad and eager, as the boy who is promised a mount with hounds, or his pretty sister, retained as a bridesmaid, on the wedding-day ; and as one of the judges of the National Horticultural Exhibition to be held in the Botanic Gardens, Manchester, I arose joyfully on the 29th of May, and a smile was reflected in the faithful looking-glass as I proceeded to shave my judicial face. Alas ! our happiness here is and must be qualified ; and when I reached the gardens at Old Trafford, the pluvial Jupiter was making advances to Flora, not, as to Danae, in a shower of gold, but in torrents of soft water. The rain had begun to drip through the canvass (a waterer whom even the Rhododendrons disapproved). It had made in one of the tents a rapid little brooklet

in close proximity to Mr Backhouse's Alpine plants, and reminding them in miniature of some mountain stream ; when most happily, most opportunely, Flora's husband, Zephyrus (see Lempriere's Dictionary, if you doubt the marriage), came to the rescue, and the clouds broke and dispersed at his presence, just as naughty boys, squirting at unprotected females, evanesce when they see policemen. Soon after the meridian the sun came out in his glory, and certainly the exhibitors came out in theirs, realising a display worthy of the merchant-princes who invited them—worthy of the winsome Lancashire witches who came to admire and be admired—worthy of the courageous spirit which offered nearly one thousand pounds as prize-money—worthy of the labour so unsparingly bestowed by the executive committee generally, and by Mr Bruce Findlay, the curator, specially.

The plants were arranged in conformity with that better taste which, suggested by the French, and first exemplified in England at the Exhibition of the Royal Botanic Society, is gradually emancipating our flower-shows from the formal dreariness of board and baize, convincing even the old stagers that it is foolish any longer to "serve tables." Some interesting and practical suggestions on this subject were made by Mr B. Williams of Holloway, when he returned thanks for the exhibitors at our pleasant little party of the committee, officers, judges, and others, on the first day of the show. He proposed that all specimens for competition should be sent in, and all the prizes adjudicated, on the day preceding the public show ; and that when the awards were made, the plants should be arranged, irrespectively of class or ownership, so as to produce the most effective, graceful, and harmonious display. The specimens might be numbered, so that the name of the grower might be found on reference to a printed catalogue, or they might bear his card. Ground must, of course, be previously prepared, laid out with bed and bank and covered with canvass, after the manner of "The International." The objection, one which only fools despise, is the expense, but that has always been found to pay which pleases the public ; and after the first outlay, *c'est le premier pas que coûte*, the charge of continuance would be small. Such a show-ground in our public gardens might be made attractive all the year round, the bedding-out plants being introduced when the spring and summer exhibitions were over and the canvass removed, and the winter garden succeeding in due course.

Taking the classes individually, and in the order of the schedule, we come first to the Grand Prix, the Blue Ribbon of the meeting, the "Sixteen Stove and Greenhouse Plants in Flower, distinct," for which the first prize was £30, and the second £20. It was a great race—almost a dead heat—between Mr Baines, gardener to H. L. Micholls,

Esq. of Bowden, and Messrs Cole, of the Nurseries, Withington, both in the neighbourhood of Manchester ; but the harmonious uniformity of Mr Baines's collection ultimately won the day. I do not remember to have seen, even in Mrs Lawrence's time, at Chiswick, in London, or elsewhere, two such collections of stove and greenhouse plants pitted against each other ; and Lancashire might well be proud of them. It was amusing all through the day to hear gardeners discussing their relative merits. "Look at those *Ixoras*," said the advocates of the winner. "They're nothing to these *Ericas*," replied the courtiers of King Cole. And assuredly, had the race been decided as at Ascot and Newmarket, upon Heaths, that *Erica Cavendishii*, 6 feet high, and 7 feet through, must have been the conquering hero—a glorious triumph of care and skill, for which the grower ought to be made "Cole, C.B." How is it that these exquisite Heaths are not more generally appreciated ? They are lovely from their youth ; every year they increase in loveliness ; their beauty is of long duration ; they may be had in their several varieties all the year round (what is prettier than *E. hyemalis* when drear December comes ?) ; they are almost hardy ; and all they require is a sweet porous peat, and such attention, with regard to water especially, as any gardener worthy the name could render readily and at small cost of time.

In the second of the open classes, Mr Baines achieved an easier victory, meeting a less powerful foe, with 20 *plants*, 10 *foliage* and 10 *in flower*. The amount being the same as in the preceding class, he thus realised £60 in two prizes ; and he well deserved it—at all events in the estimation of those who know the patience, the vigilance, the delicate manipulation, the observant study, required by such plants as these. I have heard inexpert spectators pronounce the prizes to be "enormous ;" but they may be assured that, financially, the exhibitors are not repaid—not even the nurserymen, to whom such honours are also valuable advertisements. For this reason, two of our most distinguished floricultural chiefs, Messrs Veitch and Mr Charles Turner, have expressed their intention of exhibiting on a less extensive scale, unable to abstract from more important business (the shows occurring, for the most part, at a time when there is the hardest work to be done at home) the labour and attention necessary.

The name of Turner occurs appropriately, for in the third of the open classes he won the first prize (£20) with ten of his magnificent *Azaleas*—more magnificent than beautiful to those who, like myself, would like less formality and more foliage, but quite in accordance with the fashion of the day, and splendid proofs of cultural skill. These plants were purchased, and remain at Manchester, together with the lovely *Pelargoniums* (classes 16 and 17) exhibited by the same

grower, and similarly honoured with the premier prize. These noble specimens are, I am told, in the hands of an artist. Any other might well tremble to receive them, or at least feel as much perplexed and embarrassed as the elderly female who was induced to put down her name in a raffle for an elephant, and won him!

Exotic Orchids were amply and excellently shown in the fairest phase of their refined and glowing beauty. In the nurserymen's class, Mr B. S. Williams won the first prize (£10), for 16 specimens worthy of his old renown; and in the amateurs', Dr Ainsworth and Mr Jones winning equal firsts, caused another good-humoured controversy among the *cognoscenti*. I rather inclined to the Irishman's verdict, "Aqual—but the other one a taste most so;" the other one being the Doctor's. Certainly his *Saccolabium Holfordi*, his *Lælia purpurata*, and his *Odontoglossum citrosum roseum* were charming; but so were *Odontoglossum phalaenopsis*, and *Alexandria*, the *Cattleya Wagneri*, and the *Vandas* of his adversary. Both collections were admirable, and consoled us in our disappointment caused by the absence of a selection from the houses of the late J. A. Turner, Esq., which, it was hoped, would have been sent to the exhibition. This famous collection was sold by Mr Stevens of London, on the 2d, 3d, and 4th days of June, and realised the sum of £2824.

I come now to the Roses, of which I had special cognisance as one of the censors—my judicial labour being shared by my learned brother, Mr Justice Hibberd. After growing, showing, and judging Roses for more than twenty years, one is apt to become hypercritical; but the successful specimens from Slough, Cheshunt, and Berkhamstead, satisfied, I am bound to say, all requirements. Mr Turner was first, with ten noble bushes, well covered with blooms, wonderfully bright and fresh, considering the long journey and the intense heat; and Messrs Lane second. In the competition with six Roses, Messrs Paul of Cheshunt were first, and Messrs Lane second. And, in the most interesting class of all, "20 Roses, in pots not exceeding 8 inches in diameter," Mr Turner was first, and Messrs Paul of Cheshunt an excellent second. I call this the most interesting class, because these smaller Rose-trees may be realised by rosarians of moderate means; and here in Manchester they had additional importance, because only in pots and under glass can Roses be grown within a circumference of 6 or 8 miles from the centre of a smoking city. Not within this area can any skill reproduce such specimens as were brought to Old Trafford; but certainly where greenhouse plants are perfected, Roses may be grown with adequate beauty to gladden the Rose-lover's heart. Such flowers as those of Jules Margottin, General Jacqueminot, Coupe d'Hébé, Gloire de Dijon, and several of the newer varieties shown at Manches-

ter, could not fail to succeed ; and I trust that the enthusiasm there expressed will not collapse without practical efforts to overcome all "pullbacks," and to win this war of the Rose for "time-honoured Lancaster."

Passing over many classes, meritoriously represented but not of general interest, I noted among novelties shown by the Messrs Veitch of Chelsea, to whom we gardeners are so largely indebted for innumerable and precious treasures, the two new *Alocasias*, *intermedia* and *Jenningsii*, both distinct and decided acquisitions. The leaves of the former have already attained a length of 32 inches, being in character intermediate between *A. longiloba* and *A. Veitchii* ; and the latter, having black blotches upon a ground of glaucous green, is remarkably new and striking—so much so, that a tiny plant in my stove, with only two small leaves, is always observed by that section of visitors who happen to have seeing eyes. Of the new *Crotons*, I most admire at present *Irregulum* and *Undulatum*. Of *Interruptum*, I have not as yet met with a plant sufficiently advanced to exhibit the red variegation—said to be its chief charm. Dare I say what I think of the new varieties of *Coleus*, in defiance of that floral committee, to which I once belonged, and which I love and honour? I think, "not to put too fine a point on it," that if the Royal Horticultural Society of England will continue to raise similar seedlings, and to dispose of them at a similar price, we shall soon be justly esteemed the 'cutest and the richest company upon the face of the earth.

Last and least, the Alpine plants from Messrs Backhouse of York, "wee, modest," little gems, in shape no bigger than an agate-stone on the forefinger of an alderman ; but of purest ray and perfect beauty! I have no time to speak of them ; I could not do them justice if I had. Poring over them with a reverent delight, I met an old friend, a canon of the cathedral of Manchester ; and I said to myself, "Now, I know one fount at least, a very pure one, from which you drew those waters of comfort, those excellent sermons, which I heard in my youth, and have not forgotten."

The show is over ; how has it been appreciated? It seemed a perilous adventure to some to offer nearly £1000 in prizes for flowers, close to smoky, money-making, unsentimental Manchester. What was the result? £1800 (so the curator, who has a right to be a proud man, writes to me) has been taken in half-crowns and shillings, and there is a balance of £500 for the benefit of the Botanic Garden. And this money has come principally from those who live "in dusky lane and wrangling mart," and who are supposed (by the ignorant) not to care for flowers. It is a result most gratifying to all who have com- •

bined to achieve it ; and most gratifying also to us gardeners thus to see our handiwork esteemed, and to witness among our fellow-men a participation in that happiness which fills our own hearts with thankful love.

S. R. H.

FRUIT - CULTURE.

(Continued from page 238.)

THE APRICOT.

Character and History.—The Apricot, *Prunus Armeniaca*. This well-known fruit seems to have been a favourite with the Greeks and Romans, though it does not appear to have been known to them when Theophrastus wrote, as he states that the only tree he knew which put forth its flowers before its leaves was the Almond. He must, therefore, have been unacquainted with both the Peach and the Apricot. Three hundred years later, Dioscorides refers to the Apricot under the name *Armeniaca*. Pliny about the same date states that it had been introduced into Italy about thirty years before, and was known by the name of *Præcocia*, from which name our *Apricot* is a sort of corruption. The French term it *abricot*, the Germans *apricose*, our own early authors termed it *a-precoke*. This tree is said to have been introduced from Italy into England in 1524 by Woolf, gardener to Henry VIII.

The Apricot, when well grown and ripened, is one of our very best wall fruits ; and being of an orange colour it contrasts well with other fruits, and forms a most desirable addition to the dessert. In the greater part of Scotland, and the northern counties of England, it does not ripen thoroughly on both sides of the fruit except in fine seasons, even against a wall ; and, like nearly every other fruit, unless it is thoroughly ripe it is worthless for dessert, but may be boiled down as a preserve, though defective in this respect.

Soil suitable for the Apricot.—The Apricot above all others requires that the soil should abound in chalk. At Wrotham Park, in the county of Middlesex, which is situate on the London clay, with a subsoil of ferruginous gravel, we found it impossible to cultivate the Apricot with success. Yet some twelve miles farther north, in the county of Hertford, the cottagers pay their rents out of the fruit of their Apricot trees. So notorious is this, that many of the small villages are known as “the Apricot villages.” The trees are planted against the gables of the cottages ; the roots generally under the hard paths round

the cottages, the trees themselves receiving very little attention in the way of pruning. The cause of this success seems to be, that in the locality referred to the chalk formation crops up, and the heavy loam of the London formation still lingers—a combination which evidently suits this tree, for on going farther north into the light sandy soils of Bedford, we do not find it so productive.

These circumstances point to the necessity of using a considerable portion of chalk in the formation of borders for Apricots. To a good sound friable loam we would add a tenth part of chalk, and where this cannot conveniently be obtained, old lime-rubbish.

Formation of the Border.—The border, as to drainage, depth of soil, and every particular, should be exactly such as we have recommended for the Peach, therefore we proceed to consider the

Selection of Trees.—For open-air cultivation against a south wall, our own experience leads us to prefer the Moor Park to any other Apricot. The trees should be dwarfs, fan-trained, and budded on the Muscle Plum as a stock. Mr Rivers, in his valuable little book, 'The Orchard-House,' refers to the Peach-Apricot as being "like the Moor Park, but larger and a better bearer."

It is of importance in selecting the trees to avoid such as have been repeatedly cut back, as they are more liable to canker than those that have not been so cut back.

Planting.—The Apricot requires the same treatment under this heading as the Peach.

Pruning and Training.—In the matter of disbudding, pursue the same course as with the Peach for open-air cultivation. Where it is grown under glass, we find the Apricot bears more freely on spurs than on the last year's young wood laid in at full length, therefore we advise a combination of the two systems under glass, but would avoid spurs on the open wall, as they stick out from it and get little advantage either from the radiated heat from it, or the protection it affords when the wood is laid in close to the brick. We have often seen all the blossom on the projecting spurs killed by frosty winds, while that on the young shoots laid in close to the wall escaped.

A very common error in training the Apricot, as in almost all other trees, is to leave too much wood, one shoot crowding the other to such an extent that neither gets its foliage so exposed to light and air as to mature the wood properly. One ripened shoot is worth four that are but imperfectly so.

General Management.—It is of great advantage that the wall should have a cope projecting some 6 inches ; this throws the water from the top of the wall clear of the trees, and affords considerable protection from frost. With regard to covering the trees in spring, see what we

wrote under this head about the Peach. During hot scorching weather when the fruit is ripening, it will be found beneficial to cover the trees during the day with such material as tiffany; this shades the side of the fruit next the sun, which frequently becomes over-ripe, while the other is not ripe. It forms a sort of hothouse, and applies the heat all round the fruit, and retards one side till the other comes up.

Cultivation under Glass.—Until recently there existed a very general belief that the Apricot could not be successfully cultivated under glass. This, however, is a mistake. More than forty years ago it was most successfully grown under glass at Buchanan House, the seat of the Duke of Montrose, in Dumbartonshire, by the late Mr Montgomerie. It is now very generally grown in orchard-houses, either in pots or as standards planted in the borders, or trained against the back-wall. In the latter position we have a house of it 210 feet long with a most abundant crop while we write, entirely of the Moor Park variety. Mr Rivers recommends the following sorts as suitable for orchard-house culture: The Oulins, Early Peach, the earliest large Apricot, the Early Moor Park, the large Early St Ambroise, the Kaisha, the Blenheim, the Royal, and the Peach-Apricot already referred to: these, he says, if grown as half or full standards, may be planted from 7 to 8 feet apart in the borders. We are tempted to make the following quotation from his work: "By growing the Peach-Apricot in cheap houses, as half or full standards, in borders unstirred and always hard, our markets can be supplied with Apricots at a price not at present thought of." Our market-gardeners, at present wedded to their wall-culture of fruit-trees, will do well to cover a few acres of ground with cheap orchard-houses, and to plant out in them standard and half-standard Apricot trees. "Covent Garden will then be supplied with such Apricots as have rarely been seen there. They may be sold cheap, and yet yield a fortune to the growers. The Peach and the Moor Park Apricot are the only kinds adapted for this profitable mode of culture." We have found that the same treatment in every respect under glass which suits the Peach suits the Apricot also; except that in thinning the fruit we leave about double the number as compared with the Peach, as the fruit does not attain the size of the Peach. The Apricot is not so liable to the attacks of insects as the Peach. It rarely has red spider or green fly, nor is it so subject to mildew as many varieties of Peaches are. It is, however, almost invariably attacked by a small greenish caterpillar which rolls himself up in the leaves and destroys them, and not unfrequently the fruit is directly attacked by it, holes bored in it, and it is rendered useless. To prevent the attacks of this greatest of pests in the case of the Apricot tree, note

the period at which it generally appears, and some week or ten days before mix a few pounds of pounded hellebore in water, and syringe the trees with it. Allow this powder to remain on the trees, and it will ward off the fly from depositing its eggs on the leaves. It will also destroy the caterpillar if it has made its appearance. When all danger from the attack is over, wash the powder off the trees with clean water. If red-spider, green or black fly attack the trees, use the same remedies as recommended for similar attacks on the Peach.

W. T.



NOTES ON GREENHOUSE PLANTS.

(Continued from page 242.)

FERNS.

OVER the wide field of interest in which a gardener moves, perhaps there are few subjects of deeper interest than rearing Ferns from spores; or shall we call it manufacturing Ferns? for truly we know of no other process so apparently artificial in all its bearings connected with our calling. Indeed, when taking into consideration the magnificence of structure to which some attain, the varied and exquisitely beautiful ramifications shown, with elegance united in others, we cannot but marvel that such beauty and grandeur should owe their existence to a source which just claims a name above *nothing*. With such slight materials to build the structure from, we might attribute the bulk of success to art; but we shall say no more about manufacture, since we must depend on Nature still to give life to the germ.

We have taken a leap from "Phanerogamous" to this division of "Cryptogamous" plants, and hope our digression will be excused when it is explained that in July a considerable variety of those Ferns, constitutionally adapted for greenhouse culture, are then laden with seeds, and therefore in a fit state for sowing. Before entering on cultural details I shall try to describe some of the most prominent features and parts that go to make up the structure of a Fern, and that part of the Fern we are more directly concerned in—the spores—we shall endeavour to describe more minutely; in the mean time we shall consider the body or larger parts.

Structure.—Three main principles are required to constitute a Fern—viz., roots, stem, and fronds. The roots are filamentous or threadlike, which is seen represented in Ferns by their blackish wiry fibres. The stem (caudex or rhizome) is that part of the plant from which the fronds and roots arise; properly speaking, the general characteristic of a stem is to ascend, but this form of stem, from its

appellation, leads us to look for its existence under ground. However, we are all aware there are exceptions to this ; that there are tree Ferns as well as creeping Ferns. In the leaves or fronds we have that great diversity of construction which forms their attraction. Fronds are composed of the "stipes" or lower parts, which take their rise from the stem, and stop at the junction of the leaves, denominated the "stalks." The "rachis" or rib is but a continuation of the stipes, extending itself along the whole length of the "lamina," between the "pinnæ" or leafy divisions, on each side, usually producing secondary ribs, sometimes placed alternately, and at other times standing opposite along the rachis. Those secondary ribs at times give rise to what are termed primary veins, which also are at times split into divisions, but at other times are found entire. But we shall not venture further among the mist, in case we get like some of those veins, "evanescent," and find a difficulty in getting exhumed or extricated, contenting ourselves with things more superficial in their nature. We shall now face a few of those awkward technical phrases which must be enumerated as we proceed with our subject.

Fronds are divided into two classes, simple and compound ; of the former there cannot be a modification, of the latter there are several modifications. Firstly, we have a simple frond in the oblong-lanceolate leaf of the Hart's tongue (*Scolopendrium vulgare*). Secondly, Fronds that are partly cleft, whose divisions do not reach the rachis or midrib, are designated "pinnatifid." The *Polypodium vulgare* is an example of this class. Thirdly, Fronds having their laminæ entirely cleft down to the rachis are called "pinnate." This division is shown in the fertile fronds of *Blechnum spicant* ; while the barren fronds on the same plant have their leaflets pinnatifid, but to an extent that almost ranks them also pinnate. Fourthly, Fronds whose leafy parts are twice divided are designated "bi-pinnate." This arrangement is shown in *Asplenium adiantum nigrum*, and most of the other feathery sorts. Fifthly, Fronds which show their laminæ thrice divided are called "tri-pinnate." This class is more rare, especially in British Ferns, though examples are sometimes found on strong grown plants of *Lastræa dilatata* and others. Passing over other peculiarities, I shall now attempt to describe "a sorus" or cluster of spore-cases, and then break up the community and enter the citadels of those wonderful particles of vegetable life (the spores), commencing inquiries by placing a "pinnate" (a subdivision of the frond) of *Lastræa filix-mas* under the focus of our microscope. What is conspicuous in the first degree is the shield, "indusium," which protects the sorus. The shield has all but rendered its commission, as is evident from the insecure way it rests over the pile of plump brown

spore-cases (sporangia), and the fact of its skirts being disengaged and tucked up. Suppose we carefully displace this indusium, and get a more perfect view of the sporangia. Now we have it! Those who have witnessed the eye of a fly magnified have some conception of the object. The sight is beautiful beyond description; the little globes (each an independent source of sight) closely arranged in successive rings gradually decreasing in circumference and numbers, until the top is crowned by an individual, which beautiful regularity is carried out from the base to the summit of what is generally supposed to be the eye. Similar to this is the disposition of the sporangia over its receptacle or post where the spore-cases are united to the frond. Again, let us prosecute our investigations further by breaking up this little store of curiosities, though we are loath to withdraw the eye from a scene whose ever-changing richness varies with every touch of the reflector, as the rays of light are diminished or augmented. When the "sorus" is broken down by a little friction, we have before the eye what appears to be a vast accumulation of broken spore-cases and spores heaped in confusion; and conspicuous among those is the "receptacle" half on edge, clearly showing the marks of devastation from its divested look. A few sporangia still adhere to it, but in most cases all that is left is the broken overfoot stalks. Those sporangia which appeared globular while in mass, have changed to an oval, with an irregular topping process attached to one end; this is the foot-stalk. Besides this foot-stalk, each spore-case is encircled with a band lengthwise, something like a string of closely-set pearls embracing it. But what is that strange commotion at work? What can be driving the sporangia across our field of observation, and scattering their contents like bursting bombshells in every direction? Now we have it! A strange phenomenon indeed, and equally grand to witness with any of the greater eruptions of nature; because we see in this diminutive work of Providence the same infinite perfection displayed as is bestowed on things to the natural eye more wonderful. The spore-cases are exploding, and they altogether present a sight worth seeing. Some are rending in fragments by a slow but steady process which is caused by the breaking of that elastic pearl-band which secured them throughout the period of the development of the spores within. And they now appear like living things writhing in agony, while fresh convulsions succeed each other; and while every succeeding shock extends the irregular zigzag-like rent, the seeds are ejected around. Nor is it until the seed-cases are turned inside-out that this rending agent becomes enfeebled and movement dies, leaving its neighbourhood strewed with almost invisible and what appear in the microscope transparent oval particles. Those are the spores.

Having thus far endeavoured to show the wonderfully perfect construction, and the different ends that those objects have severally to fulfil, let us now consider the application of the spores as seeds and subject of culture.

Spores are known to perform the same functions as seeds, and are in every way equivalent to them. Yet, notwithstanding this similarity in other respects, there exists a wide difference, more especially in their modes of germinating. Seeds give rise to both roots and stems from regular established sources which Providence has assigned them. Spores differ inasmuch as they afford stems from whatever part happens to be uppermost, and roots *vice versa*. Indeed both start spontaneously when placed in a situation favourable to germination.

While collecting spores for sowing, it should be noticed that they are properly matured, which will be seen in most instances from the indusium being disarranged (where such exists), and of a brownish colour, as well as the sporangia being plump and of the same cast; but we should be certain that we are not outwitted even by this rule, as in many instances the spores have already taken flight. This fact was very clearly illustrated in our experience. While in the act of making comparisons of spores taken from different species, we found what appeared to the natural eye, and the feeling between the fingers, the finest developed sample to be, after tried with the microscope, but the shells or spore-cases, while spores there were none.

Soil and Culture.—The soil should be composed of one-fourth silver sand, one-fourth rotten beach-wood and sphagnum moss chopped together, and two-fourths fibry peat wrought in a dry condition and sifted as fine as possible. But first a box from 15 to 18 inches square by 6 inches deep behind, sloping to 3 inches before, with a glass lid attached by two light hinges, is necessary, drilling a few holes separately through the bottom. Next cover the bottom 1 inch deep with broken pots, and over this put a layer of moss sufficient to leave the surface regular and smooth. Lay on the surface of the soil an inch deep above this lower stratum, which press gently together with a piece of board; this will render the bed properly firm for the spores; but before scattering the spores a good method is to divide the bed with the edge of the board into as many divisions (draughtboard-wise) as there are varieties to sow. This accomplished, moisten the bed with a very fine rose, and allow the water to subside; after which sprinkle from the fingers and thumb carefully a little of the spores taken from the different plants into the respective places allotted them, but avoiding mixing. Following this arrangement one is able to judge which sorts are the most successful and which are not, with the additional advantage of being able to choose a desirable number of each for transplantation.

The case may then be placed on a shelf in a shady part of the vinery, or in a warm part of the greenhouse not subject to cold currents, shading the bed by drawing the whiting-brush over the glass outside; this will subdue the sunlight sufficiently for ordinary days, but in days of powerful sun-heat and drought, an additional covering should be put on until the sun's rays are off the glass. Keep a watchful eye that the surface of the bed does not get dry, and daily remove the condensed vapour that will arise from the soil and gather on the glass. Admit air sparingly, only for an hour once or twice in a week until the plants appear, so that a little fresh air is administered to the soil, but this should not interfere with constant maintenance of a moist atmosphere so essential to work the process of germination. See that at this stage the soil is not allowed to get dry, at the same time guard against keeping the bed saturated, as this would be sure to propagate a scummy formation which would soon overspread the bed, besides encouraging the growth of Moss. Moderation is the best preservative in either case.

As to the time spores take to germinate, and the duration of the "vital spark" in them, it is difficult to determine. Some make their appearance in a few weeks, others in a few months; while others, again, allow a good many months to elapse before signs of life are indicated. The infant Fern in its earliest stages of development is a curiosity indeed; nothing is more unlike a plant than the infinitely minute speck of a green ball that requires the help of a pocket lens to define it, and looks like a watery substance, instead of a Fern in the course of formation. The next stage, one might say, is discernible to the naked eye—being indicated by a slight green cast on the surface of the soil generally, but the glass has still to be brought into requisition; but under that power, in place of appearing globulate, they have assumed a saucer form, which goes on swelling its proportions for some time before leaves are started; and when leaves (fronds) do first appear, they are of the most humble character, being only a simple linear process expanding towards the point, where it is cleft.

It is our purpose to pursue our cultural remarks in another paper, and in the mean time we annex a small list of the most suitable exotics that we are acquainted with, both for a trial in rearing and for greenhouse culture:—

Adiantum cuneatum.
Adiantum curvatum.
Adiantum formosum.
Adiantum pubescens.
Adiantum reniforme.
Aspidium bulbiferum.
Aspidium Sieboldii.

Asplenium bulbiferum.
Asplenium lucidum.
Blechnum hastatum.
Blechnum lanceolum.
Cyrtomium falcatum.
Davallia Canariensis.
Diplazium decussatum.

Doodia caudata.
 Doodia aspera.
 Gymnogramma leptophylla.
 Gymnogramma sulphurea.
 Nephrodium molle.
 Notholaena nivea.
 Notholaena Canariensis.
 Onychium Japonicum.

Pteris longifolia.
 Pteris (Cassebeera) hastata.
 Pteris serulata.
 Pteris tremula.
 Pteris falcata.
 Lomaria nuda.
 Polypodium Cambricum.
 Polypodium rugulosum.

A. KERR.

(To be continued.)

STOCKS.

STOCKS! What need to say anything about Stocks? Everybody grows and knows about their culture perfectly well. Such or something like it may be the exclamation of some readers when their eye catches the heading of this paper. But the hundred questions which have reached me of late about the culture of Stocks make out a very different case. Indeed, I am inclined to think that to popularise and instruct in the fine varieties of Stocks is very far from being a work of supererogation. The decorative capabilities of the finest varieties of the intermediate Stock are not so well known or acted upon as they deserve. The effects which can be produced by the purple, white, and scarlet varieties, both for spring and autumnal gardening, are scarcely equalled by any of the now popular plants. In saying this the practice and experience of many gardeners is the only corroboration that I would appeal to.

For instance, in the end of March 1867 I sowed in a cold frame a quantity of the East Lothian scarlet, white, and purple Intermediates. In May these were transplanted to where they were intended to bloom for the season, and up to November the amount of double bloom which they produced is known to many who saw them here and at other places in the Lothians. In November nearly the whole of the doubles were lifted and potted. They continued to bloom more or less the whole winter and spring, and were planted out in March with a good crop of bloom on them. Since then they have made fresh growth, and are now, notwithstanding that great quantities of bloom have been cut from them, literally a cloud of bloom; and it is hard to convince any one who has seen them that they have been in bloom for twelve months. For spring and early summer flower-gardening these Stocks are unapproachable, and cannot be too strongly recommended.

The way to have the finest bloom early in summer and all through the season is to sow in June in the open border thinly, and when two inches high, and before they become drawn, transplant them into beds in rows six inches apart each way. Till they get fresh hold of the soil and begin to grow, they require shading, and watering should the weather be dry. By the early part of October they will have formed bloom-buds, and it can be seen which are double. They should then be potted up into 6-inch pots. For this purpose use light rich soil, such as equal proportions of loam and leaf-mould, with about a fifth of the whole of sand. When potted set them in a shady sheltered place, or better still, where it can be afforded, in cold pits or frames. Here they soon establish themselves; and if cut bloom through the winter is not an object, the bloom-buds may be pinched off them. A moderately dry place where they can be protected from severe frost will suffice for their winter quarters. If they can be afforded space in cold frames under glass or in vineries or peach-houses at rest, they will grow more or less all winter, and can be had in pretty full bloom by the middle of March, when, if spring display be the object, they can be planted with immediate effect. But for coming into bloom in May and three following months they are best not allowed to bloom till after being planted. Those who have not seen rows or beds of these, entirely of double-flowering plants, can have little idea of how splendid they are.

To sow in spring for late summer and autumn blooming they are well worthy of being more carefully treated than is general in the case of Stocks. I would advise their being sown in heat early in March, and when they form the rough leaf to be pricked off in boxes 2 inches apart each way: and before they become crowded to be potted singly into 2 or 3 inch pots, and kept in cold frames till well established, but not pot-bound, when they should be planted out about the first or second week of May where they are required to bloom. Managed thus they are prevented from making tap-roots, and receive no check when planted, but come much earlier into bloom than when allowed to remain in the seedling bed or rows till finally planted out. It matters very little about their blooming a month earlier as far as their late blooming is concerned, for their blooming powers are so great that if they begin to flower in the end of June they will bloom into winter. To do this, however, they must have deep rich ground. When plants are plentiful it is a good plan to pot up a quantity into 6-inch pots and keep them in reserve, so that the singles can be lifted out of the beds or lines and be replaced with doubles. In dry sheltered situations where the winters are not severe, the midsummer-sown plants can be planted after the summer

bedding-plants are removed in October. But in this case it is best to keep a reserve that can be protected to meet contingencies.

For pot-culture the value of the ordinary intermediate Stock has been long recognised in some localities especially, and for the London market they are grown by the thousand. To have fine plants for the greenhouse or conservatory in March, April, and May, June-sown plants lifted in October and potted in 6 or 8 inch pots will bloom magnificently, and when large specimens are required it is only a question of room, shifting into larger pots and tying them out. I have seen Mr Lees at Tynningham have them, I should say, nearly 3 feet in diameter and one cloud of bloom. And certainly these have but few rivals for this purpose, taking their sweetness, purity of colour, and immense show of bloom into consideration. And as they require but very ordinary means or accommodation for their culture, they are emphatically the plants of the million. D. THOMSON.



THE POLYANTHUS.

I MUST express my thanks to "Quo" for the valuable aid he has given in the 'Gardener' towards the advancement of the interest in the good old Polyanthus.

It would indeed be passing strange for florists to agree in every point; there seems to be in them an inherent disposition to differ, from which I must acknowledge myself not entirely free.

That "the day of named Polyanthuses is past," as stated by "Quo," I am loath to admit, as I cannot see why it should be any more than the Pink, the Auricula, or any other florists' flower. Types of these may be and are raised from seed, and if superior in any point to the original are deserving of a name. But these types are the effect of self-fertilisation, and if florists would only take the Polyanthus into their especial care, as is the case with the Auricula, the effect of careful crossing would soon be manifest by the appearance of different and improved varieties. For example, take Buck's George IV., give it the tube of Zantarara and the refinement of Saunders "Cheshire Favourite," and you have a model flower to work upon for further operations.

My practice in raising seedlings does not differ much from that recommended by "Quo;" but I find that the constant watering of the seed-pan for the length of time required before the seed begins to germinate, causes an accumulation of mossy surface through which the water will not penetrate. As a remedy for this, I drain the pot

well with coal-cinders, placing a layer of dried moss over them. After, filling the pot and sowing the seed as before directed, I plunge the pot up to the rim in a pail of water, until I perceive the moisture forcing through the top soil; letting it stand to drain, I then cover the surface lightly with a few sprays of damped moss; over this I place a square of glass and plunge the pot in a cold frame in a mixture of ashes and sawdust, where it will only get the morning sun. Here it may remain, and will require no other attention for a fortnight: after that time it will require careful waterings, and in four or five weeks the seedlings will be making their appearance; after this the moss may be removed by degrees, the glass tilted to admit air, and finally removed altogether; but the plants must be well shaded from a southern sun.

Standard varieties of the *Polyanthus* are perpetuated and increased by division of the roots, each heart having a tap-root from which issue those smaller rootlets that take hold of the soil and convey that nutriment necessary for the wellbeing of the plant. In dividing the roots do not cut, but tear them asunder with finger and thumb, breaking off any old or decayed parts, and reducing it to not more than $1\frac{1}{2}$ inches long. Plant in a soil as recommended by "Quo" for seedlings, viz., loam, sand, and leaf-soil, unless the loam is of an open texture; then the sand may be omitted. Attend to watering and the plants will grow rapidly, and in five or six weeks be ready for planting out in the prepared beds.

Three seasons of the year have been recommended by growers for the performance of this operation—viz., 1, The first week in June, or as soon as the bloom is fairly over; 2, The last week in July, when the latest rootlets begin to move near the collar of the plant; 3, The first week in September, or as soon as the young grass is about 2 inches long. The latter season is generally my practice, and I find it the safest period at which this part of their culture may be performed. The great aim of the cultivator should be to grow the plant with only one heart and one truss in order to obtain fine flowers.

DERA.



NEW PLANTS OF THE PAST MONTH.

MR BULL has brought forward recently on two or three occasions some examples of his new varieties of *Coleus*. First-class certificates have been awarded to Beauty, Gem, and Nonsuch. They are very much in the way of some of those produced by the Royal Horticultural Society.

In some quarters these new varieties have been highly commended ; in others regarded as weeds, and only fit for the rubbish-heap. The true verdict must be left to time ; one thing is certain, that there is a large demand for them on the part of purchasers. Probably the gem of the whole batch will be *C. Telfordi aureus*. Each time it is exhibited it appears to improve in character ; and not only does the marking become more distinct, but the habit of the plant decidedly improves in vigour. Confident opinions have been expressed that it will prove *the* bedding-plant of the year. It has now received a first-class certificate, and will be distributed by Mr J. W. Wimsett, Ashburnham Park Nursery, Chelsea, London.

Two new plants have just been exhibited, one of which, if not both—but one certainly—is such a plant as may be said to appear only in a lifetime. It is a *Melastomad*, and is named *Lasiandra macrantha*. Just imagine flowers of *Monochætum ensiferum* nearly 4 inches in diameter, and of a rich violet hue, and some idea can be formed of this splendid plant. *Pleroma elegans* has been likened to it ; but this “glory of the garden” has a rich beauty and massive proportions of its own, in such a degree that the comparison cannot be sustained, unless as exhibiting the peculiar hue of colour it reflects. The two plants staged by Mr Bull at one of the meetings of the Royal Horticultural Society did not rightly represent this fine novelty, as the plants were spare, somewhat denuded of foliage, and the flowers at their worst. At Mr Bull’s nursery small plants of it can be seen, blooming freely, close in habit and gloriously fine. It was awarded a first-class certificate, and obtained the gold medal of the Society, as the best new plant in flower. The other plant to which reference has been made with the above is *Actiniopteris radiata*, a small and singularly dwarf-growing Fern (in its present stage at least) with fan-like leaves, which bears a close resemblance to a miniature Palm. It was shown by Mr J. W. Cross, gardener to Lady Ashburton, Melchet Park, Romsey, and was obtained by him from the East Indies. It also received a first-class certificate, and was awarded the gold medal of the Society as the best new plant out of flower. The following two other Ferns have received first-class certificates : *Athyrium filix-fœmina grandiceps pumila*, and a variety of *Lastrea dilatata*, both new and distinct hardy Ferns.

The same award was made to a very singular-looking Orchid named *Nanodes medusæ*, having a large purplish crimson lip. It was shown by Mr Stone, gardener to J. Day, Esq., Tottenham.

A first-class certificate has been awarded to a very fine variety of *Schizanthus pinnatus* named *splendens*, shown by Mr Green, gardener to W. Wilson Saunders, Esq. of Reigate. The colour of the flowers is bluish-violet with slight white centres. It has been obtained by careful

selection for three or four years past, a proof of what can be done with many of our hardy annuals when subjected to a like process.

Verbena Dr Livingstone is one of those fine orange-scarlet flowers of which we already possess several good examples. A dark crimson ring surrounds a showy lemon eye, and if it beds well will become a favourite. One of the blackest self Pansies ever seen came a short time ago from Mr Tillery of Welbeck. He termed it a bedding kind, though really it appears to be too dark to be effective when used in this way. A good hardy white bedding Pansy—one that will stand the cold and damp of winter well—is greatly needed; and Mr Fleming of Cliveden fancies he has obtained this in a seedling from the white self-flower Great Eastern, crossed with a vigorous-growing fancy kind. It has done remarkably well at Cliveden during the spring, but then it has been a very mild one, and the Cliveden flower-gardens are nicely screened from the rough usage of wintry wind and nipping frosts.

Seven first-class certificates were awarded to Messrs Downie, Laird, & Laing, at the Crystal Palace Show, for gold and bronze Zonale Pelargoniums. The varieties were Beauty of Kent, Magnificent, Miss Maynard, Stanstead Beauty, Black Knight, Mr F. Hohler, and Mrs Lewis Lloyd. In the production of fine kinds of this division of bedding Pelargoniums, Messrs Downie & Co. have taken a decided lead, and will no doubt hold their own at the coming show of Variegated Pelargoniums at South Kensington, in the classes in which these new kinds will compete. A first-class certificate was awarded to Mr Turner, of Slough, for a capital Silver-edged Variegated Pelargonium named May Queen. It is something in the way of Bijou, but a great improvement on it, and promises to make an excellent bedder. R. D.



FRENCH ASPARAGUS CULTURE.

(Continued from page 133.)

A REPETITION of this work is continued for three successive years, great care always being exercised that the crowns of the Asparagus are not in any way injured by the hoe in clearing and loosening the soil. I believe more damage is done with careless handling of this instrument than in any other way. I consider the long-handled Dutch hoe is not at all adapted for Asparagus work. The short-handled French hoe is the most useful garden implement I know in its way, and for this purpose it is unequalled. Cutting is not commenced till the fourth year. Here, again, great care is exercised in the operation not to injure the

crowns. An inexperienced hand, therefore, is never employed to cut the Asparagus heads. In many exposed parts supports are necessary to the strong and heavy growths towards July. Wire, branches, and various other means are used to avoid the twisting of the shoots by the wind.

The Paris market-gardener prepares and forces his Asparagus in this wise: Beds 4 feet wide (the width of the French dung-frame) are formed and planted in April with fine selected one-year-old roots, all of one strength, as near as possible. From the fact of the seed being sown separately, no fears are entertained that two roots are growing into one—a point the French gardener is very particular in avoiding for indoor as well as for outdoor culture. These beds are sunk a little below the common level (6 inches); and if the soil is bad or indifferent, then it is renewed or improved. The French gardener goes to a similar expense with his forcing *Aspergerie* as the British gardener does with his Vine-borders. Accumulations of his Melon-frames, potting-sheds, the sweepings, road-scrapings, and other *débris* from the Paris streets, thrown in a heap and aired by a turn over now and again, form a famous compost in which the Asparagus roots and grows with great luxuriance. These 4-feet-wide beds then are enriched with this mixture to the depth of 15 inches, and planted with well-formed roots in three rows; 1 foot apart each way is the space allowed for each root. Nothing unusual in the work during two years' growth, but ordinary gardening care in cleanness and attention to mulching in hot weather, with short litter, and keeping the shoots erect and secure from winds. At the end of two years, or when the plants are three years old from seed, forcing begins. The advantage in having all the plants strong and vigorous alike is obvious from similar reasons that we desire our Pine-Apples to be all of one growth and strength to fruit together. This advantage is gained by carefully planting well-selected roots in the first instance, and a little extra attention to those lagging behind during the nursery period.

The walk or strip of common soil between the beds is dug out in the month of October, to the depth of the new or improved soil in the bed, and filled with new stable litter and leaves, or separate, as the case may be. By this time the growths are matured and cleared away, the beds carefully loosened and watered with warm water, the frames put on, and the light as well, and kept always closed, that every ray of sun may be husbanded at this period. The spaces between the frames are now filled with litter up to the top of the frame, and all finished off in a square, tidy, and businesslike manner. The frames themselves are only a foot in depth, and are made of rough boards nailed to four posts of oak, which are a little longer than the width

of the board, so that they form 4 feet. The object of this is for the heat from the trench of leaves or dung to enter the frame from the bottom. Some of the Paris gardeners employ a large number of these frames for all purposes of vegetable-forcing. Potatoes, Carrots, Kidney Beans, and even dwarf Peas, are grown in them, and in summer Melons and Cucumbers are produced in large quantities. They are invariably made 9 feet long and 4 feet wide—for two lights, of course, 4 feet 6 inches by 4 feet—so small and convenient that one man can work it with one hand and water with the other. This is the advantage, and I believe it to be a great one, over the larger form of frame. If all has gone on well, growth will commence in December. At this period an earthing-up takes place by placing over the bed 2 or 4 inches of a similar soil as the roots were planted in.

The prevailing custom to have so much of the stalk blanched is why this is done, but I think it a very unnecessary thing to have a long white handle to the Asparagus shoot. Of course it is done for the convenience of eating in the case of large heads; but for the small grass the blanching is not resorted to. I have seen magnificent bundles of Asparagus in some of the fruit-shops in Paris in the month of November, and a friend of mine told me he would undertake to produce it all the year round; certain it is, Asparagus-forcing is one of the chef-d'œuvres of French gardening.

H. K.

ERRATUM.—At page 132, fourth line from top, for “forcing” read “forming.”



THE POLYANTHUS.

SUCH a spring and summer as those of the present year—in so far as it relates to the neighbourhood of London—has been, and still is, particularly trying to the Polyanthus. On the western side of the metropolis no rain has visited us for weeks, and the subsoil being of stiff clay, the earth has become at first hard baked, and then alive with gaping fissures, so horribly prejudicial to the plants about them as to cause the florist great and prolonged trouble and anxiety. When I had gathered my seed, I observed that the young growth that follows the bloom had begun pushing itself into green leaves, to form the foliage of another season. To screen this from the drying effects of the hot sun, I first of all gathered some fine soil about the plants, and then gave the bed a thorough watering through a coarse rose watering-pot. When the leaves had become dry, I scattered some short but dry stable-manure about and over the plants, almost entirely hiding

them from view. So far this has answered well, and the plants under such a friendly protection are making their growth as if they heartily enjoyed the new conditions under which they found themselves placed.

In hot dry places many Polyanthus die for want of a little care during the summer months. I allude to those plants that, like my own, are cultivated entirely in the open ground. The care at this critical season is profitably employed; and I shall reap these advantages from it—strong plants and fine heads of bloom next season, when spring comes quickly to

“Write Love’s fair alphabet upon the sod
In many-coloured flowers.”

Quo.



GLADIOLI.

WHY is it that we are so dependent on our Gallic neighbours for our supply of this magnificent flowering bulb? Are there not many localities in England and Scotland where it can be as freely multiplied, and as fine bulbs produced, as in France? From my own experience I am inclined to think that there are, and that as fine, if not finer, bulbs can be produced as speedily in many places at home as abroad. Here, for instance, most imported bulbs that I have grown—and they are grown extensively—produce almost always two and sometimes three bulbs of much finer size than those brought from France. To multiply them thus to meet the enormous demand that there is for Gladioli now is simply impossible; not only, however, do they double and treble thus in full-sized bulbs, but they besides form between and about the cluster of bulbs numbers of small bulbs, by some called spawn and spores, about the size of large marrow Peas. Thousands of these are produced in dry light rich loamy soils here and elsewhere annually. To grow these into flowering bulbs can be very quickly and easily accomplished. It is only necessary to detach them from the parent bulbs, mix them with moderately dry earth all winter, and sow them in drills, or broadcast in light rich soil about the first week of April. (I fancy they might be sown in autumn in dry places, and protected from frost with litter.) Many of the strongest of these infant bulbs have flowered with me the first season. As soon as they begin to show signs of moving the following spring, lift them and plant in rows about 8 inches apart, and 2 inches between bulb and bulb. They will then be about the size of marbles; and most of them

bloom the same season, and form splendid bulbs by the end of October. In this way I could produce hundreds of thousands here if it were required. And surely it would answer the purpose of the trade thus to home-grow them, seeing it can be so easily, cheaply, and speedily done; and then this gorgeous plant will be brought within the reach of the million growers for whom they are so well suited, because they can be stowed away in a dry cool drawer all winter, and require no potting nor care more than a Potato in spring. The *Gladiolus* is the king of all flowers for lasting and opening its blooms after being cut and placed in water.

In light dry soils it is not even necessary to lift the bulbs every winter, for they keep freshest and best left in the ground; but they must be protected from severe frost by a covering of litter, which can be easily done when planted in beds. When in lines and mixed borders, it is less trouble to lift and keep them dry and cold.

D. THOMSON.



NOTES ON HARDY HERBACEOUS PLANTS.

CAMASSIA ESCULENTA

Is a very beautiful hardy bulb. In appearance generally the plant resembles some of the larger-growing Squills, and at one time was named *Scilla esculenta*, and in some Catalogues it still bears that name. The leaves are longer, broader, and softer than those of any Squill with which I am acquainted, and are all radical. The flower-stems rise to the height of eighteen inches or two feet; are rather slender, and should therefore receive early attention in the way of support. Fully half the length of the flower-stems is occupied with the loose but graceful raceme of purplish blue flowers. Like many of the beautiful tribe (*Asphodeleæ*) of plants to which it belongs, the flowers of *Camassia* are not of long duration, three weeks or a month being the utmost length of time that the flowers of this species may be expected to last, but, being a bulb, and a pretty early one—flowering about May and June—this peculiarity is of less account, because for continuous display, something may be planted near it, to take its place when its day is gone. This plant is not often met with in private gardens; and in public gardens, where it is found, it is rarely in so good dress and health as it should be. Generally it is placed in a bed or border, in the full glare of the sun, with a foot or more of clean soil all round—circumstances most inimical to the wellbeing of a shade-loving plant like this. Partial

shade is essential to *Camassia* ; it should therefore be planted in such a position that the power of the noonday sun will not fall on it. Peat or old leaf-mould add vigour to the plant.

ASPHODELUS RAMOSUS.

This is a striking, bold, and useful plant, very hardy and easy to cultivate. The leaves and mode of growth closely resemble those of *Tritoma*. The flower-stems rise to from 2 to 6 feet high, are stout and elastic, and except in windy situations are independent of artificial support. They bear many branched spikes of white flowers, often more than 2 feet in length. I have found the flowers very useful for cutting to decorate rooms, the peculiar silvery white colour being very beautiful in mixture with louder-toned things in baskets or vases. It blooms in May towards the latter end, and in June throughout the greater part of it ; and forms a fine companion and contrast to the earlier flowering *Delphiniums*, or to the fine scarlet *Papaver pulcherrimum* which blooms about the same time. This *Asphodelus*, and indeed every other, prefers a heavy rather moist soil ; and it is not averse to a little shade. In semi-wild places, in woods not too shady or too dry, near streams and lakes, where its peculiar style of growth is very fitting, it may be planted with excellent effects. Powerful weeds must be kept down in its neighbourhood in such places till it establishes itself, and it will dispose of the weaker ones itself. Pigs are said to be very partial to the roots of this plant ; so much so, that in the tracts of country where it abounds the wild boar in grubbing for them tills in his own fashion the soil. It is to be hoped the inhabitants of Barbary and neighbouring countries have sense enough to profit by the industry of the brute.

ASPHODELUS ÆSTIVUS

Is so near in character and appearance to *Ramosus*, that for the purposes of the gardener it does not call for special remark in these notes. It flowers a little later, and the flower-spikes are usually more simple, while the colour of the flowers is about the same.

ASPHODELUS LUTEUS

Is a very handsome species, very distinct from either of the foregoing. The leaves in this species are not, as in them, wholly radical ; they are carried up the stout erect flower-stems to the base of the spikes of flower, diminishing in length and breadth as they ascend, and are recurved on the stems in a very graceful manner, imparting to the whole plant a very unique style. It flowers about the same time as *Ramosus* ; the flowers are yellow, in close spikes, which, except

in very luxuriant individuals, are usually unbranched. It is easy to cultivate, but is not so suitable as *Ramosus* or *Æstivus* for planting in semi-wild places.

CHRYSOBACTRON HOOKERII.

This is a very select hardy herbaceous plant of comparatively recent introduction. It was its misfortune that it first appeared in this country about 1850 or '51, when the fever for the present style of flower-gardening was something new and all-absorbing. It is yet therefore rare in the country—more so than it will be when it becomes better known; for there is no doubt that, whatever the outcome may be of the present groping about for something better, more satisfactory and continuous, than what is afforded by the different styles of spring and summer flower-gardening presently so equivocally patronised, these early-summer-flowering plants must be called in as accessories in their season to fill up the gap that occurs between the spring and late summer occupants of the flower-garden, which are indisputably the perfection of their respective seasons. The leaves of *Chrysobactron Hookerii* are 1 inch or rather more broad, and from 9 to 12 inches in length, rather flaccid, and tinged with brown. The flower-spikes rise to about 1 foot or 18 inches high, the main portion of the stem being covered densely with the golden yellow flowers, which are not individually very lasting, but are produced in great profusion and in considerable succession. The flowers appear in May and June. Like most *Asphodeleæ*, *Chrysobactron* should not be placed in a position too directly exposed to the mid-day sun. Those who are bethinking themselves of adding to their stock of this class of plants, should make a note of *Chrysobactron Hookerii*.
W. S.

ERRATUM.—In June number, in page 256, line 19, for "*Valeriana Divica*" read "*V. Dioica*."



HINTS FOR AMATEURS.—JULY.

ALL vegetables planted in well-prepared ground last month will now have a good hold of the soil. To prevent them suffering a check, every effort should be made to keep them in active growth. To secure this the hoe should be used freely among all growing crops, keeping the surface clean and open, preventing cracking, which is more common on heavy soils, especially after rain succeeded by drought. Where there is an abundance of soil, such as refuse of potted plants, &c., it is of great service to stiff soils by throwing it over the surface to act as a mulching. This practice saves the

use of the watering-pot and reduces surface labour. Thoroughly decayed manure used freely over the roots of Peas and Beans is a preventive of mildew. Planting of Broccoli and all other winter crops should be attended to before the season is too far advanced. If the ground is very dry it would be well to water the drills thoroughly the evening before planting. The roots and stems of the plants may also be puddled in water, soil, and a little soot, which will keep them fresh and help them after being planted. A succession of Kale, Cabbage, Savoy, and Brussels Sprouts should be in hand to plant up ground where early Potatoes and Turnips are lifted from. Broccoli to supply autumn and winter should be well soaked with water, stirring the battered surface soon afterwards. Liquid manure will be of great service to crops in poor soils. Sow more Lettuce and all other salads as the demand may require. The tops of Celery ridges are generally very suitable for Lettuce, Spinach, and French Beans; though it is rather late for sowing the latter in cold late districts. Red and white Stone Turnips may be sown to give a supply in winter. Shallow drills well watered before sowing are essential for such small seeds in dry hot weather. When the haulm of Peas and Beans is done with, clear it off so that the ground may be cropped; using Peas stakes for later crops. Sow early York Cabbage to succeed the Colworts; towards the end of the month a full sowing may be made for spring supply. In southern localities the second week of August is a good time for a main sowing. Spring Onions may be sown before the month is out. Prickly Spinach for early winter supply may be sown on deeply trenched ground; where Strawberries are finished answers well to trench it down. Crops to stand the winter should, if possible, not be exposed to the easterly or northern winds. Peas coming in too quickly may be topped down; they will break out again and produce abundantly. It may be necessary to mulch over their roots, first breaking the surface well, then giving a good soaking of water, beating the mulching firmly with a fork as it is put on. Mowings of grass do for this purpose, but large quantities of weeds are often brought in which can hardly be got rid of for years. Garlic, Shallots, and underground Onions may be lifted when their tops become brown. They can be tied in bunches and hung up to dry, first for a short time in the sun, then taken to an open shed and hung on the rafters. Celery may be earthed up as it grows, keeping the stems upright and compact, dusting with lime to keep slugs in check. Good soakings of water are necessary to keep Celery from running to seed, and also because when freely grown it is crisp and finely flavoured. Latest crops not planted should be put in without delay. Thinnings of Parsley may

be planted in rows in a sheltered position, which will make fine hardy plants for winter use; on a ridge is a good position for winter Parsley. Allow no plant of any description to seed on the ground, except when seed is intended to be saved. Any seed such as Cabbage, Kale, or Turnips, must be saved from birds; stakes fixed firmly round the plot and netting placed over, allowing no holes where small birds can enter, will keep all secure. It may be necessary to preserve them against wind by staking and tying up. Vegetable Marrows and Cucumbers will now be growing freely; they will require looking to frequently, to keep them stopped and thinned; pick the top off above each fruit; weakly growths may be cut clean off. Frames will not require so much attention now with lining, but the night temperature should be kept steady; slight shading may be necessary for Cucumbers to prevent the fruit from turning bitter; stunted growth and a broiling sun will produce bitterness in the best kinds of Cucumbers. Heavy drenchings of cold water, or *vice versa* keeping the roots inactive, is also productive of bitter Cucumbers. A good stock of best kinds of Strawberry-runners should be secured without delay. They can be placed in pots to root, watering them freely to keep the soil moist, and when growth becomes active the plants may be detached and grown on; all they require is abundance of water and the roots not allowed to grow through the pots. This is how they are generally prepared for forcing, but plants to be turned out in autumn or next spring will be in good condition for forming an established plantation, and the ground may produce a crop while the plants are growing; favourite kinds which may not throw out many runners, can be increased by dividing the crowns, keeping a little root attached to each piece.

Fruit-trees will require to be well syringed occasionally, to refresh them and keep them clean. Crop moderately, and expose the fruit to sun and air. Fruits, however excellent, when allowed to hang thickly huddled together are only fit for culinary purposes. Young fruit-trees should be gone over frequently, regulating and stopping gross shoots; this will secure equal and fruitful wood, and also save much labour in years to come. Nets may have to be used to keep off birds; bottles half filled with beer and a little sugar is an old practice for trapping wasps and flies; a little treacle and water also answers well. Pears and Apples trained to walls or espaliers will require frequent attention, taking off superfluous growth by degrees. If large quantities of young wood are taken off at once, spurs which would have produced fruit next season may be started into growth and rendered useless. This applies to small fruits as well, whether as bushes or trained to fences, &c. Time is seldom bestowed on disbudding and regulating fruit-bushes, which is necessary to secure fine fruit.

Dahlias, Hollyhocks, Sunflowers, standard and pillar Roses, and all tall-growing plants, should be securely fastened to stakes, now that they are heavy and easily destroyed by wind. A mulching of good rotten manure placed over the surface of their roots, and a thorough soaking of water given, will secure fine large flowers and vigorous growth. Soil can be taken off an inch or two, the manure placed in its stead and the soil returned, keeping in the virtue of the manure, and allowing the surface to remain tidy. Dahlias may require a little thinning and the flowers exposed to view, but each plant should have as much room as it requires. Hollyhocks for exhibition should have only one stem left, and the flowers allowed to stand clear of each other. Roses are very liable to the attacks of green-fly and mildew. Thorough syringing, or rubbing them off with finger and thumb, may keep the fly in check ; and dusting with sulphur when the leaves are moist will keep down mildew. Allow no suckers to grow on Roses. If flowers are required for exhibition, canopies should be placed over them to keep off rain. The budding of Roses may be performed without delay. Choose the most vigorous shoots of the stocks, cutting all others not required clean off. Take the buds of the Roses with half an inch of bark to each, the leaf remaining to each bud ; take out the wood clean, leaving the bark and bud entire. With the knife make a slit in the bark of the stock, then cross it over at the end, as near the base of the wood as possible, thus forming a T ; raise up the bark on each side, which should readily peel off. With the handle of the budding-knife or thin piece of wood, place the bark of the bud neatly under the bark of the stock, fitting them nicely, the bud exactly in the slit, the leaf remaining ; tie the bark of the stock with matting or worsted, cover with a little loose damp moss for a day or two, and the work is done. All buds should be placed as uprightly on the upper sides of the branches as possible. Pinks may have all their cuttings taken off and put in if not already done. Keep those already in well shaded, giving a little air to the handlights as soon as any growth is seen. If the surface of the soil is soapy and damp, a stirring with a pointed stick may be given. Carnations and Picotees may be layered, choosing the bottom shoots which will bend down. Cut off all the leaves except the three or four joints at top. About 3 or 4 inches from top, cut under a joint on the under side of the stem, drawing the knife upwards to the middle, half-severing the stem. Cut off the thin piece below the joint, half cut through. Take away a portion of the soil round the plants, and in its place put sandy light soil, raising it above the surrounding level. The prepared layers are bent down in the fresh soil, fastening the split joint firmly, and bringing the top of the layer quite upright,

pressing the soil neatly round the wound ; pots can be used, and the plants can be established in them and grown on and bloomed in pots, or afterwards planted out. Propagate Pansies as soon as cuttings can be had ; they root quickly under handglasses, using sandy soil and choosing shady positions. Chrysanthemums in pots or planted out will require plenty of water ; a surfacing of old manure will help them. Neglect at their roots will cause them to shed their leaves early. Calceolarias, Geraniums of the scarlet class, Heliotropes, Verbenas, and other flowering plants grown on for flowering in autumn, will require shifting into larger pots, as they fill their present pots with roots, and when well established, and the size desired attained, they may be allowed to flower ; weak liquid manure given liberally will keep them flowering throughout the whole autumn. To have handsome plants, few stakes should be used, and hid by the wood and foliage of the plants. Pelargoniums when done flowering may be placed in the sun to harden, then cut down and allowed to break ; shake them out of the soil, reduce the roots and pot into small pots, using sandy soil at first, and good loam with a little sand when they are placed in their flowering pots. Cinerarias may be divided and potted in light sandy soil, using small pots ; keep them cool and rather in the shade. Seedlings may be pricked off and grown in cool positions, keeping down insects by fumigating. All plants in bloom, such as Balsams and Fuchsias, should have their seed-pods picked off as soon as the blooms drop, except when seed is to be saved. Boxes with plants in windows will require plenty of water, the decaying leaves and flowers picked off, surfaces well stirred, and top-dressing given.

M. T.



AFRICAN LILY—HARDY.

THE *Agapanthus umbellatus* is a fine old plant, now greatly neglected. In the south of Ireland this African Lily is hardy enough to stand planted-out, and flower annually with very slight protection. Sometimes we throw over the beds a bundle of dry fern, sometimes a barrowful of ashes, and some get no protection. This treatment has gone on satisfactorily for six years in the Rock Garden here. Last year the flower-stems were few, but this season the plants promise abundant bloom. A few years ago the Royal Horticultural Society of London distributed a "maximus" variety, which in leaves and flower seems an improvement on the old variety. Like many other plants, we find great variety in size and colour of the flowers in seedlings, and seedlings are the most desirable where it is intended to plant-

out in quantity. The *Agapanthus* is often treated as a sub-aquatic, but this treatment is not essential for its out-door culture; we have seen it flower freely for years in the gardens at Kilkenny Castle on a dry limestone soil. We cultivate the African Lily here in deep clayey earth enriched with manure; in this way the flowers are fine and last long. We have some plants treated as sub-aquatic, but the flowers do not come so regular although the leaves are extra fine.

There are few gardens in which this plant would not find an appropriate place. The style and colour of the flower are peculiar, and very ornamental. Let any amateur who is not afraid to be called *old-fashioned* cultivate this Lily in a greenhouse, associated with good-sized plants of the *old* "Unique" *Geranium*, and we will be greatly surprised if his neighbours do not pronounce the effect *unique*.

In greenhouse treatment this Lily is much injured by being placed in shade, and with too little pure air, which causes the flower-stalks to come weak, and the flower loses that beautiful deep blue colour which so much distinguishes it. Where plants are in request for decorating halls, &c., this plant has few rivals in decorative effect. Where the plant is required to flower in summer, I believe it will be found better to winter it out of doors under proper protection, than under "stages" and odd corners in glass-houses, where plants of this class are often excited into weak growth, which greatly diminishes a vigorous bloom. In most private gardens there is a great lack of frost-proof pits without glass, which would be of immense value in the cultivation of such plants as we here speak of. The rickety makeshifts in the shape of "old lights" and turf pits we have so often to deal with, are far behind the requirements of our necessities to keep up fresh interest in spring and summer gardening.

Such plants as the *Agapanthus*, *Yuccas*, *Aralias*, many Palms and Ferns, and quantities of most useful subtropical plants, might be better wintered in pits such as I indicate, and of which I have some in operation, than under glass in ordinary establishments, and with a fraction of the labour and expense.

I may mention that the African Lily comes in beautifully between the *Candidum* Lily and the *Tritoma uvaria* in outdoor culture.

CHAS. M'DONALD.



SOUTH KENSINGTON SHOW.

ANOTHER show of Variegated *Pelargoniums* was held at South Kensington on the 16th of June. It brought together a large number of plants, and excited considerable interest among the fanciers of this class of bedding *Pelargoniums*. For one golden-edged Variegated *Zonale* not in commerce—1. Messrs E. G. Hen-

derson & Son, St John's Wood, with Mrs Grieve, a finely marked and distinct kind, probably one of the very best that Mr Grieve has ever raised. 2. Mr J. Stevens, Ealing, with Achievement, a variety noted for the exquisite colouring and the fine shape and artistic finish of the leaves. 3. Messrs Carter & Co., Holborn, with Ettie Beale, a beautiful variety of a similar character to the foregoing; and 4. Mr John Mann, Brentwood, with Masterpiece, a very good and promising kind. For one silver-edged Variegated Zonale Pelargonium not in commerce—1. Messrs John & Charles Lee, Hammersmith, with Mrs John Clutton, a good, well-marked, and robust-looking kind. 2. Mr P. Grieve, the Gardens, Culford Hall, with Lass o' Gowrie, a very promising variety. 3. Messrs Carter & Co. with Princess Beatrice. 4. Mr C. Turner, Slough, with Miss F. Stevens. For one gold and bronze Zonale Pelargonium not in commerce—1. Messrs F. & A. Smith, Dulwich, with Criterion, and also second with Arab; two fine and distinct kinds with broad bright zones on a golden ground. 3. Mr C. Turner, with Mrs Simpson; and 4. Messrs J. & C. Lee, with Lady Farnham. For one golden-leaved Pelargonium not in commerce, Messrs Saltmarsh & Son, Chelmsford, were 1st with Golden Emperor, and 2d with Golden Queen, two very promising kinds. 3. Mr J. Keeler, Lewisham, with Golden Queen, distinct from the foregoing of the same name, and not so good. 4. Messrs F. & A. Smith with Golden Gem. For one silver-edged Pelargonium not in commerce—1. Mr C. Turner with May Queen, an excellent variety. 2. The same with Bright Star. 3. Messrs E. G. Henderson & Son with Bridal Bouquet. 4. Mr Turner with Miss Bridges.

For three golden Variegated Zonale Pelargoniums not in commerce—1. Messrs Carter & Co. with Sir Robert Napier, a very distinct variety; Prince of Wales, very fine; and Mrs Dunnet, also fine. 2. Messrs E. G. Henderson & Son with Maid of Judah, Firebrand, and Countess of Ashburton. 3. Messrs F. & A. Smith. For three silver Variegated Zonale Pelargoniums not in commerce—1. Messrs F. & A. Smith with Peri, Banshee, and Miss Burdett Coutts, three very fine kinds. 2. Mr C. Turner with Excellent, Clara, and Miss F. Stevens. 3. Messrs Garaway & Co., Bristol, with Silver Pheasant, Julietta, and Cup of Beauty. For three gold and bronze Zonale Pelargoniums not in commerce—1. Messrs F. & A. Smith with Goldfinder, Plutus, and Sybil, three very distinct and fine kinds. 2. Messrs Carter & Co. with Cleopatra, Black Prince, and Antony, also very fine. 3. Messrs Saltmarsh & Son with Plutus, Bronze Queen, and the Hon. Mrs Cloughton. In all these classes two plants of each variety were staged. This condition was enforced in order that no seedling plant merely should be exhibited.

The next class was a very general one. For twelve Zonale Pelargoniums, distinct, in commerce or not, of any class, variegated Zonale, gold and bronze, or golden-leaved, in pots not exceeding 8 inches in diameter—1. Mr C. Turner with Lady Cullum, Mademoiselle Christine Nilsson, Mrs Turner, Queen Victoria, Dr Simpson, and Sophia Dumaresque, golden variegated Zonales. Beauty of Guestwick, Princess of Wales, Clara, Empress Eugenie, and Excellent, white and silver-edged variegated Zonales. And 3. Messrs Carter & Co. Messrs E. G. Henderson & Son staged some finely grown specimens in this class that would have been awarded first prize, but were disqualified for containing two plants of Italia Unita. For six Zonale Pelargoniums, restricted as above, in pots not exceeding 6 inches in diameter—1. Messrs Carter & Co. with Sultana, Valide, Princess of Wales, Ettie Beale, Dr Livingstone, and Edith Stuart, golden variegated Zonales; and Egyptian Queen, gold and bronze Zonale. 2. Messrs Downie, Laird, & Laing, with Countess of Kellie, Hero, Golden Circle, Black Knight, Mrs Steines, and Beauty of Oulton, all gold and bronze Zonales. 3. Mr C. Turner. This class was confined to nurserymen, and a similar one for

amateurs gave the following result: 1. Mr J. Janes, Highgate, with Lady Cullum, Edwina Fitzpatrick, Mrs Pollock, and Miss Mary Janes, golden variegated Zonales; and Italia Unita, and Picturata, silver-edged variegated Zonales. 2. The name of the successful exhibitor could not be ascertained. 3. Mr W. Groom, Ipawich. For six Gold and Silver Variegated Zonale Pelargoniums, in commerce, distinct—1. Messrs E. G. Henderson & Son with Lady Cullum, Countess Tyroconnell, and Magdala, golden Zonales; and Velvet Cushion, Caroline Longfield, and Italia Unita, silver-edged Zonales. Messrs F. & A. Smith were disqualified in this class, having staged a gold and bronze Zonale variety. For six Gold and Bronze Zonale Pelargoniums, in commerce, Mr H. Cannell, Woolwich, was first with Princess Alice, E. G. Henderson, Countess of Kellie, Her Majesty, Beauty of Ribblesdale, and Mrs J. W. Todd. 2. Messrs Downie, Laird, & Laing, with Beauty of Calderdale, Kentish Hero, Model, Egyptian Queen, Countess of Kellie, and Her Majesty. 3. Messrs F. & A. Smith with Mrs Charles Barry, Gipsy Queen, Creole, Beauty of Calderdale, Bronze Belt, and Egyptian Queen. Lastly, for one Golden or Silver Variegated Zonale Pelargonium, in commerce, three plants—1. Messrs E. G. Henderson & Son with Howard Ashton, a fine golden Zonale. 2. Messrs S. Perkins & Son, Coventry, with Countess of Craven, a very fine and promising bedder. 3. Mr C. Turner with Mrs Turner. 4. Mr Turner with Lady Cullum. As compared with last year's exhibition, the rush of new kinds was not so noticeable, and it is worthy of remark that not a single certificate of merit was awarded to any one variety, the leading kinds having already received that reward. Considering that among these Pelargoniums there must of necessity be a considerable amount of sameness in their general appearance, it is well to gather up yearly by means of exhibitions of this kind the sum of the highest results that have rewarded the raisers. Without some such aggregate gathering, the various types of plants could not be kept in view, and they would multiply with a perplexing repetition; whereas these shows teach us what we already possess, and so what to avoid and what to strive after. Finely-marked kinds are becoming abundant; what is now required is novelty, both in the marking of the leaf and in the production of new types, always allied, be it distinctly understood, with vigorous and yet compact bushy growth, and with the property of having the character of the plant maintained to a great extent till the leaves fade and fall away.

R. D.

BEDDING-OUT

Is over for one year more, and every individual bedder has no doubt introduced something which he considers new, or an improvement on former years, either in materials or arrangement. Herein lies real improvement, or rather advance—something gained by feeling our way: sudden change is not improvement, neither is change in any form always advancement. No doubt by the autumn some of our well-known flower-garden pioneers will have shown us some safe practical step in advance, alluring us into fresh arrangements and leading the way. The bedder-out seems steadily to hold his own, and marches

Y

forward with colours flying, gaining fresh laurels and fresh vantage-ground, notwithstanding the many flank attacks he is again and again subjected to, and the treacherous allurements of would-be friends to tempt him out of the course of safety. The bedder is in the position of the successful and rising man; he is envied and detracted, and his little faults exposed with Grub Street pertinacity. He retaliates the sneers of the semi-botanical and herbaceous man by recruiting from his own ranks many of his best subjects, bringing them into line of battle, and turning the guns against the enemy. Whole families are going over to the camp of the bedder—for instance, *Viola* and *Primula*. The hot-headed rush of the sub-tropicals, who aimed at usurping the place of honour, is decidedly checked; they are sharing the fate of their cooler brethren. The more honest of the recruits are being drafted into the ranks of the bedder-out; the rest are left out in the cold, or to retreat to their legitimate quarters indoors, where they may yet figure to advantage when order becomes the word in arrangements indoors as it is with the bedder-out. But if many are envious of the bedder-out because he is prosperous, for the same reason many are ambitious to join his standard, because they wish to be on the winning side, and press weak and doubtful recruits into the service with fine names and loud pretensions. The Zonals are particularly faulty in this respect, both plain and variegated, but they drop to the rear in crowds and are lost among the stragglers. Much of the outcry against the bedder-out is the effect of the craving after change—sudden change, revolutionary change, which, if yielded to, would end in chaos. Flower-gardening is advancing fast, and healthy change is also being effected sufficient to gratify healthy taste, which any one may see who compares the flower-gardening of to-day with that of ten years ago. The success of modern flower-gardening is very much the result of order and system in arrangement. We would almost submit that order "is beauty in a flower-garden," as it is in nature. Order includes symmetry, a just balancing of parts, as it would strike the eye of the landscape-gardener, not forgetting the order produced by the hoe and broom. Colour alone does not give beauty, although an accessory: a garden or conservatory may be full of flowering plants without any defined effect, but take and arrange them into order having some design in it, and the result is magical, no matter what the materials may be, let them be ever so simple. Of course, form is a chief element in order: let us first have order and form, then we give effect to colour. Let any one consider how ungainly a quantity of fruit of various sorts looks spread out on a table; but take and arrange it tastefully on a large dish or dishes, or in a basket, and the effect is a picture.

Having fixed on a good order of arrangement, it is wonderful what liberties we may take with colour. We speak of colour in flowers; of course we fully appreciate and recognise the importance of arrangement with an eye to contrast or harmony. Exceedingly few colours in flowers can be identified with the primary prismatic colours; the colouring of individual flowers sometimes defies the laws of contrast, harmony, or complement; although some—for instance, the flower of the *Gazania*—would suggest a beautiful arrangement in itself. Colours in flowers have always appeared to us so infinitely beyond artificial colours, that provided system and order are attended to in arrangement, and with an eye to form, incongruities can seldom be committed. It is, after all, taste which is the guide, as no rule can be applied: he who dares the most, will have the most success, we had almost said. The absence of all rule, with the variety of material in form and colour now at command, is just what throws the man of ability into prominence.

We have often observed failure in effect by the bedder-out crowding in much that had no other merit than that it was new—the recoil of the novelty mania, when the qualities of some of the oldest flowers are quite forgotten because they are old. As an instance of what can be done with very simple materials within the reach of everybody—say, in filling a large bed, or long line, or panel, as the case might be—take the common variegated *Alyssum* for the field, as they say in heraldry, and *pick* it out with *Saponaria* at intervals, the latter raised early in pots and planted out with the *Alyssum* in a line, every third plant to be *Saponaria* if a bed, to be encircled by a band of *Nepeta*, and finally edged with yellow *Pansies*. We never could see the force of the complaints for the want of greenery in the flower-garden; perhaps we are of that unhappy number who never could see anything. We have always found, that for the few months that flower-gardening can be done in earnest, we cannot have too much of a blaze to satisfy all expectations. Of course we are in the country, and in the centre of a park filled with masses of large trees for miles, and containing miles of green drives, and shady, ferny banks,

“Where nature lies around, deep lulled in noon,”

to steal a line from Thomson: our flower-garden may be called the centre from which radiate those Gothic shades, itself surrounded by a wall of lofty oaks and beeches. I can conceive the horror of its noble mistress returning from a ramble in the sea of green, and finding her flower-garden garnished with gaudy plants of *Castor oils*, beds of *Cannas* or *Wigandias*, perhaps a few *Cycads*, Dwarf *Palms*, and *Caladiums* suffering from catarrh or jaundice, because, forsooth,

the glare of colour must be toned down. Why, the eyes want to be warmed after being cooled by so much green. Green seems to us to be the most in fault at most places, so far as quantity is concerned; it may be different with the city man, whose whole estate is besmeared with Geraniums. We do not, however, eschew all greenery in a flower-garden. Much depends on the style; but, speaking of the geometrical and massing style, especially where grass is absent, we think that single specimens of such things as Robinia, Ailanthus, Tulip-trees, Catalpa, Negundo, and dozens of others which will occur to any one, would relieve the complained-of flatness, and affect the tropical to greater advantage than any quantity of Ficus, Palms, Grevilleas, &c., proposed, at least north of the Humber. Those trees can be kept within bounds with the knife; when too large removed, and replaced with others.

We sometimes hear of the monotony of the present system of flower-gardening. The monotony, we suspect, is in the arrangement. By adopting a *system* of mixing, to bring out fresh shades of colour, as we have hinted above, variety is endless. But why should even the very plants of old acquaintance be tired of? People do not tire of Roses and Mignonette. The same carpets and furniture, paper-hangings and pictures, are under the eye for years, unquarrelled with; and why should not the flower-garden be carpeted the same every season, if such were not so easily changed? The lady whom it is our duty most to please, gently hinted last year that the flower-garden might be planted exactly the same next season, but vague foreshadowings of the future plan were already in fermentation, and hints are not commands.

In giving weight to form and order in arrangement, it is clear that simplicity of design in the ground and in the planting must be studied. Chain and scroll borders and designs are only tolerable on a pretty large scale, and then only when planted simply so as to show unity in effect when the whole is under the eye. Beds on grass should be as simple in form, and as large as possible consistently with the situation. We abhor beds sprinkled about like fragments of gingerbread; and what shall we say of beds in box or grass, in imitation of the pattern in a carpet, or sprawling like the illuminated border of a title-page? Some seem to be copied from the ornamental hinges on a church-door, or like so many Fleurs-de-lis pointing to the four points of the compass, which are fanciful enough on paper, and exhibit 'cuteness in laying-out, but are simply confusion when planted. Here for the present we must say, "Hold—enough!" The sub-tropicals seem to have made terms with the weather this season, to the discomfiture of the whole generation of Viola. We have planted, and would now gladly

water, if we had it. "All-conquering heat, oh intermit thy wrath!" The very grass cries out; between the beds it is brown as the beds themselves, or the lines of Iresine which fringe the beds of Mrs Pollock and Cloth-of-Gold. But roots are making fast, and buds are breaking strong round the vases of Geraniums, Verbenas—indeed everything, and St Swithin is yet in prospect; then Sweet Peas and Canary Creeper will rush to the top of the sticks and reach us their blooms half-way. Stocks, Mignonette, and Saponaria will spread along the surface and refresh both the nose and eyes on their descent from the London divisions, and the whole host of bedders will be again in a blaze.

THE SQUIRE'S GARDENER.



THE FRUIT CROPS.

As a whole, it may be said that we hardly ever or never experienced so congenial a spring as the past, a dry atmosphere, warm sunshine, and for the most part warm nights. There could not possibly have been a larger display of fruit blossom, and when expanded, the garden was a uniform street of flower. But withal the hour of disappointment was in reserve to cut down our expectations, and so on the morning of 12th April we had 5° of frost, which made sad havoc. The damage could not for a week or more be calculated, not till the fruit should have begun to swell.

The Pear crop is confined principally to the hardy English kinds; the French varieties are nearly a complete failure—at least there are not more than a few stragglers. What is rather surprising, the greatest number is confined to the earliest sorts.

Although not a heavy crop, there will be enough Apples to meet the consumption, confined almost uniformly to those kinds which come into use during the early part of the season. The more tender and shy-bearing varieties are not entirely barren; there is a sprinkling, far below the average of years. The Cider orchards crop heavily, which we might expect, as the trees are coarser, hardier, and flower later than our culinary sorts. Cherries are plentiful, whether grown against walls or as kitchen-garden standards. Peaches on the open walls are about half a crop, and the same may be said of Apricots. Bush fruit of every kind is abundant, and will be small, owing to the long-continued drought; so gardeners who have to transact business with catchy, querulous housekeepers, will require to cultivate their defensive faculties; for whenever these ladies dispute a point, or desire to find fault, they possess a kind of logic peculiar to themselves. Nuts

are a complete failure, not only among the cultivated varieties, but in the coppice as well.

A single report will not furnish a fair statement as to the state of our fruit crops; they vary considerably in different gardens yearly. In this way, when a garden is placed on low ground, it is more subject to be attacked by hoar-frost than when situated on a higher altitude, so that reports will vary considerably. The hillside is also to be rejected, as the rising ground or angle collects the sun's rays, heating unduly the atmosphere long before the danger of frost has passed away.

ALEXANDER CRAMB.

SORTWORTH COURT, GLOUCESTERSHIRE.



SUMMER EXHIBITION OF THE ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

THE above exhibition took place in the Music Hall, George Street, Edinburgh, on the 10th of last month. As a collection of horticultural subjects it was an average one. The plants were placed on lower tables or benches than usual, and so placed they looked much better than when placed on higher benches, looking at them as individuals; but when the hall became—as we are happy to say it was during the afternoon—crowded with visitors, the plants could only be seen in small sections at a time, being, as they were, lower than the visitors; and the exclamation of many on entering the hall was, “Where are the plants?” It was from the gallery alone that a full view of them could be obtained. There was, as we also noticed at the Glasgow show the week before, a great want of tall Ferns and Palms to set amongst the dwarfer and more rubicund specimens of Heaths, Azalias, and Geraniums. This is a defect which both Societies should endeavour to meet for the future by offering such prizes as will bring forward a few collections of plants with graceful foliage. The spring show in the Music Hall, which was, in all respects but the one we have just referred to, an excellent one, was admirably photographed by an Edinburgh artist. We saw the pictures recently, and they, more than anything else, impressed the defect we are calling attention to on our minds. It is quite true that the primary object of such exhibitions is to encourage and reward clever cultivation, and that the cultivation of both tree Ferns and Palms requires very little skill; yet regard must be had to the encouragement of correct taste, and we maintain that fine form is far beyond and above fine colour in this respect.

To our minds it appears demonstrated that horticultural exhibitions will never become so popular in Scotland as they deserve to be, and as they are already in England, till a complete change takes place, first, as to the places where they are held, and, in the second place, in their arrangement.

If a large glass structure could be erected in Princes Street Gardens, with banks covered with Lycopods and other green creeping plants, and so terraced that the pots could be hid, and the plants only could be seen, with ample room for thousands to promenade, and the exhibition kept open for several days, an impetus would be given to horticulture which few dream of; and when exhibitions of flowers were not occupying such banks, we answer for it that our nur-

serymen would keep them filled with Conifers and other graceful trees and shrubs in pots, all correctly labelled, on the understanding that they were to have the addresses of their firms on them. In such a building bands could play, and the public promenade on certain days of the week, on payment of a small entrance charge. We have been led into this long digression by a feeling that unless something like what we have suggested is done, flower-shows will lose their attractions for the public generally.

In the competition for stove and greenhouse plants, Mr Lees of Tynninghame was first with *Saccolabium guttatum*—a splendid plant—*Nerium splendens*, *Aerides Lindleyana*, two plants of *Erica ventricosa* and *Aerides oderata*. The collection from Dalkeith Park, in which there were some fine Heaths, a fine plant of *Pimelea decussata*, 5 feet through, and a good plant of *Clerodendron Balfouriana*, was second.

The collection of stove plants from Tynninghame, in which were good plants of *Calanthe veratrifolia*, *Lælia purpurata*—a very fine variety, the white remarkably pure—*Sobralia macrantha*, *Cypripedium barbatum*, and *Caleya mossia aurantiaca*, was first. We did not observe who got second.

For the season, very fine Azaleas came from Mr M'Farlane, King's Meadows, Peebles.

For stage Pelargoniums the competition was not extensive. The first prize was awarded to Mr Cameron, gardener to Samuel Hay, Esq., Trinity Cottage, which was a silver teapot. Messrs Lawson & Sons filled the orchestra with foliage plants; besides which they filled a table with stove and greenhouse plants, amongst which we noticed a seedling scarlet Geranium named David Syme, raised by Mr Carmichael, gardener, Sandringham; but the judges seemed to think it too closely resembled sorts already in the hands of the public to deserve special notice; yet it is undoubtedly a very fine scarlet with fine green foliage and a dark sone on the leaf. Carstairs & Sons filled a table with plants; as did Methven; Drummond Brothers; Downie, Laird, & Laing; and Dickson & Co. A very elegant and well-filled Fern-case was exhibited by Wilkie & Paul, Grove Iron Works, Fountainbridge, Edinburgh. We feel bound to remark that it would be very desirable to have the tables all filled with specimen plants for competition, instead of the mass of small though useful plants sent by the several nurserymen to fill up the tables, and add to the attraction of the exhibition; yet they are not such plants as should be exhibited on such occasions.

Of fruit there was a very creditable display; the collection from Dalkeith consisting of Pines, Melons, Grapes, Peaches, and Nectarines. Very good Black Hamburg Grapes were shown by Mr Laing, gardener, Pitcarlie, Fife; and Mr Temple, gardener, Balbirnie, in the same county. They were placed in the order in which we have named them. Remarkable bunches of the Duchess of Buccleuch, 18 inches long and well shouldered, were shown from the gardens of — Brown, Esq., Buckholmside, Galashiels: they were shown in the class for flavour, but were not ripe, and were beat by small but ripe bunches of Chasselas Musqué. A very fine Persian Hybrid Melon was shown by Mr Neil, gardener, Wemyss Castle.

Remarkably fine Strawberries were exhibited by Mr Marshall, gardener, Kingston Grange, near Edinburgh. The sorts were Oscar and Sir Charles Napier.

The Scottish Pansy Society held their exhibition in the Hall on the same occasion; a full report of which will be found in our present number.

The directors of the Caledonian Horticultural Society and their friends, joined by the members of the Pansy Society, dined together in the Albert Hotel in the afternoon.

SCOTTISH PANSY SOCIETY.

THE twenty-fourth annual competition of this Society was held in conjunction with the Royal Caledonian Horticultural Society's Show in the Music Hall, Edinburgh, on Wednesday the 10th ult. The competition in all classes was keener than usual, sixty-four boxes having been entered for competition. The Show, as a whole, was exceedingly good, there being, besides all the best-known varieties brought forward, many new and valuable sorts exhibited. Among amateurs this flower is exciting a lively interest, and perhaps for this class of exhibitors no other flower is so well adapted, as it blooms ten months in the year.

We may mention that this Society is in a most flourishing condition, numbering now over one hundred members, thirty of whom have joined since last season.

Annexed is a list of the awards :—

Twenty-four Blooms (Nurserymen).—1. Downie, Laird, & Laing (with Clara, Francis Lightbody, George Keith, Oriol, Alexander M'Nab, Arab, Cherub, Dux, Eclat, Ladyburn Beauty, Andrew Smith, Comus, Chancellor, De Foe, George Wilson, J. B. Downie, Attraction, Countess of Rosslyn, Cupid, Invincible, Lady L. Dundas, Lavinia, Princess of Wales, Village Maid); 2. Dickson & Co.

Eighteen Blooms (Gardeners and Amateurs).—1. Mr John Fraser, gardener to James Hope, Esq., Belmont (with Alexander M'Nab, Arab, Dux, Alexander Whamond, Robert Burns, Lady L. Dundas, Mary Lamb, John Inglis, Cupid, George Wilson, Miss Muir, Miss Ramsay, Golden Queen, Princess of Wales, Waverley, Eclat, Emily Lyle, Countess of Rosslyn); 2. Mr Tod, Newmills, Ayrshire.

Twelve Blooms (Gardeners and Amateurs).—1. Mr John Currie, Parkside (with John Hay, Masterpiece, Clara, Ladyburn Beauty, J. B. Downie, Victor, De Foe, Princess of Wales, George Keith, Lavinia, Yellow Queen, Norma); 2. H. W. Adair, Esq.; 3. James Fergie, Dunse; 4. J. Beveridge, Bonnington.

Six Blooms (Gardeners and Amateurs).—1. James Fergie, Dunse (with Clipper, Princess of Wales, Locomotive, J. B. Downie, Masterpiece, Alice Downie); 2. J. Beveridge; 3. George Wilson, Esq., Dunse; 4. J. Fraser.

Twelve Blooms (Amateurs).—1. James Fergie (with William Austin, Village Maid, Miss Muir, George Wilson, Lavinia, Golden Prince, Alexander M'Nab, Thomas Martin, Lady L. Dundas, Locomotive, J. B. Downie, Cupid); 2. William Old, Rosslyn; 3. Matthew Tod; 4. John Morris, Dundee.

Six Blooms (Amateurs).—1. F. L. Fleming, Esq., Berwick (with George Wilson, L. F. Fleming, Clipper, Princess of Wales, George Keith, J. B. Downie); 2. H. W. Adair, Esq.; 3. Major Mackay, 3 Hampton Terrace; 4. Charles Watson, Esq., Dunse.

Four Blooms (Amateurs).—1. L. F. Fleming, Esq. (with Francis Lightbody, Miss Muir, Princess of Wales, Village Maid); 2. P. W. Sime, Esq., Newington.

Prize, 10s. 6d., offered by H. W. Adair, Esq., for the best four white, four yellow, and four selfs.—1. L. F. Fleming, Esq.; 2. George Wilson, Esq., Dunse.

Prize, 5s., offered by Major Mackay, for the best six dark selfs.—1. John Beveridge.

Prize, 10s. 6d., offered by William Welsh, Esq., for the best six seedlings.—1. Dickson & Co.

Lady's Prize, 15s., offered by Charles Watson, Esq., Dunse, for the most tastefully arranged bouquet of pansies.—1. Mr Adair, 4 Hampton Terrace; 2. Miss Ritchie, Newington; 3. Miss Lorimer, Mayfield Terrace.

FANCY PANSIES.

Twenty-four Blooms (Nurserymen).—1. Downie, Laird, & Laing (with Daisy, Dewdrop, Dragon, Keckum, Miss Deans, Jane Wilson, Rev. James Robertson, Tambourine, Amy, Figaro, H. W. Adair, Indigo, Lady Montgomery, Mrs R. Dean, Mrs T. Scott, Miss Melville, Naomi, Demay, Ninian Niven, Princess Alice, Miss J. Kay, Madeline Tweedie, Mrs Adair, Mrs R. B. Laird, Striped Queen); 2. Dickson & Co.

Twelve Blooms (Gardeners and Amateurs).—1. John Beveridge (with Amy, Earl of Rosslyn, Figaro, Indigo, Harlequin, Mrs R. Dean, Mrs H. Northcote, Miss Melville, Naomi, Demay, Oriana, Princess Alice, Princess Mathilde); 2. H. W. Adair, Esq.; 3. Mr John Currie.

Six Blooms (Amateurs).—1. James Fergie (with Miss Melville, Miss Deans, Daisy, Mrs R. Dean, Black Prince, H. W. Adair); 2. Francis Lightbody, Esq.; 3. George Wilson, Esq.

Best Fancy Pansy in the Exhibition.—Messrs Downie, Laird, & Laing, with Mrs Adair.

Best Fancy Pansy in the Exhibition (Amateurs).—James Fergie, Dunse, with Miss Melville.

Best Dark Self.—Downie, Laird, & Laing, with Alexander M'Nab.

Best White Self.—James Fergie, with Miss Ramsay.

Best Yellow Self.—John Beveridge, with Golden Lion.

Best Primrose Self.—Dickson & Co., with Emblem.

Best Light Ground.—Dickson & Co., with Jane Wilson.

Best Yellow Ground.—Downie, Laird, & Laing, with George Wilson.

Best Pansy in the Exhibition.—Downie, Laird, & Laing, with Alexander M'Nab.

A fair average number of seedlings were exhibited, many of them very promising. The following were selected by the judges as being very meritorious, and received the following awards: First-class certificate to Messrs Downie, Laird, & Laing for Fancy Pansy Mrs Adair—an extraordinary flower both in size and quality. The same firm also received a first-class certificate for another fancy named Magdalene Tweedie, having a very dark ground, margined with light primrose. Mr Fergie received a first-class certificate for his dark mulberry self Locomotive. This will be a great acquisition in its class, having fine colour and perfect form. Messrs Dickson & Co. exhibited some very promising seedlings; the following received first-class certificates: Jane Wilson, a white ground flower of fine properties; and Reform, a yellow of medium size and fine form.



GLASGOW AND WEST OF SCOTLAND HORTICULTURAL SOCIETY.

THIS Society held one of its summer exhibitions on the 3d of last month in the City Hall, Glasgow. The day was all that could be desired—bright sunshine with a fine refreshing breeze blowing. This and the attractions of the show brought great numbers of the citizens to the hall; and we admired the avidity with which the ladies especially rushed from group to group of plants to examine and admire.

We have on several previous occasions seen the hall more crowded with plants.

The falling off in this respect is, however, fully accounted for by the circumstance that Hamilton Palace Garden no longer puts in an appearance, and the noble groups of plants that Mr Mitchell used to stage leave a decided blank. This, however, is no way the fault of the directors, who are fully alive to the necessity of keeping up the character of the exhibitions, and have been successful in inducing John Russel, Esq. of Mayfield, near Falkirk, to become an exhibitor; and on this circumstance we heartily congratulate them. Mr Russel filled a large table, or rather stage, running across the whole width of the hall at the extreme end. This beautiful collection consisted of a background of Palms, Tree-Ferns, *Dracænas*, and other ornamental-foliaged plants, in front of which were placed a large assortment of fine Orchids in bloom; amongst them we noted *Cypripedium concolor*, *C. Hookerii*, *C. Lowii*, *C. barbatum*, *C. barbatum grandiflorum*, *Phalœnopsis grandiflora*, *Saccolabium præmorsum*, *S. curvifolium*, *S. guttatum giganteum*, *Vanda tricolor*, *V. suavis*, *Cattleya speciosissima*, *C. lobata*, *C. Trianaïi*, *Odontoglossum niveum magus*, *O. citrosimum roseum*, *O. Bluntii*, *Aerides Lobii*, and several others, forming by far the most extensive group of Orchids we ever saw on an exhibition-table from one establishment in Scotland; and when we reflect that some four years ago, when visiting Mayfield, we noticed that Mr Russel, after having made one of the most extensive and unique collections of all the various sections of *Coniferæ*, *Rhododendrons*, and hardy shrubs of every description, had begun to purchase Orchids, with whose habits and cultivation neither he nor Mr Sorley, his gardener, had any previous acquaintance, we feared that anything but success would attend their labours in a region so thoroughly unknown to them; but the fact seems to be that both master and man are gardeners by intuition, and as we have since observed, when we have called, and had amply demonstrated on the 3d of last month, they got into the right rut at once, and are now able to cope with those who have made Orchid-culture a life study.

In addition to the plants named, Mr Russel exhibited a most beautiful *Amaryllis* called "Empress of Brazil," bloomed for the first time in Scotland. It is of a light blue colour, and grows about four feet high. Mr Dickson, gardener to Thomas Coates, Esq., Ferguslee, near Paisley, showed a very fine table of well-grown stove and greenhouse plants, for which he got the first prize. Mr Allan Ferguson, gardener to A. G. Kidston, Newton House, Cambuslang, had also a very fine table, and was a good second. Mr Duncan M'Farlane, King's Meadows, Peebles, exhibited some very fine specimens of *Azalias*, for which he got a first prize. One of the most pleasing features of the exhibition was the fine banks of variegated and tricolor *Geraniums* exhibited by Mr Campbell, gardener, Castle Milk, near Glasgow, and by Dreghorn and Aitken, nurserymen, Kilmarnock. Mr Campbell's seedling, which we noticed favourably when he exhibited it last year, is by far the most effective white and green foliaged variety we ever saw. We measured an inch of pure white margin round the green entire on some of the leaves. It is infinitely before Princess Alexandra which stood beside it, and was sent out as one of the best of this class. Backhouse's Flambeau and Mrs Dix were the best of the tricolors. Ebor, E. G. Henderson, and the Countess of Kelly were the best of the gold and bronze *Zonales*. We very much admired Mr Campbell's collection of pyramidal-trained plants of his seedling Castle Milk and kindred sorts. They had a most pleasing effect, and must be very effective either for conservatory or table decoration. In the 'Gardener' of last year we had the pleasure of giving Mr Campbell's mode of treating these plants in full detail.

J. & R. Thyne, nurserymen, Glasgow, exhibited a very fine table of plants, amongst which there was a specimen of *Anthurium Scherzerianum*, with twenty

fully expanded flowers, and some of its leaves 12 inches long. To this plant was awarded the prize offered for the most meritorious plant at the exhibition. Five exceedingly well grown stove and greenhouse plants were shown by Mr Kidstone, of Woodburn, Rutherglen; consisting of *Azalia Criterion*, *Eriostemon pulchellum*, *Bougainvillea glabra*, *Dracophyllum gracile*, and a Heath. Some fine Orchids and Ferns were exhibited by Mr Alexander, gardener, Towerville, Helensburgh; and some scarlet and white *Ranunculi* by Mr Henderson, Ardrossan. Tulips were shown in considerable quantity; the best of which came from Mr McDonald, Ibroxhill, Glasgow, Mr McMillan, and Mr George Meek, Denny. We are glad to observe symptoms of a revival of a taste for what may be termed the old florist flowers. Messrs Dickson & Turnbull of Perth sent a very fine collection of cut blooms of the more choice sorts of *Rhododendrons*, amongst them Minnie, Titiens, Lady Eleanor Cathcart, and others.

The judges on the occasion were—for stove and greenhouse plants, Mr Turnbull, Bothwell Castle; Mr Robertson, Coulter Gardens, Biggar; and Mr Burnet, Sighthill Cemetery. For Tulips, Pansies, and florist flowers, Mr Anderson, Neilston; Mr Watson, Paisley; and Mr William Paul, Crossflat Nursery, Paisley. For cut flowers, Mr J. Shanks, Gartliston; Mr Sutherland, Dumbarton. For fruit, of which there was a very poor exhibition, Mr Campbell, Craighead Gardens, Hamilton; and Mr Lamont, nurseryman, Edinburgh. For Bouquets, a committee of ladies acted as judges.

The judges and directors of the Society, with their friends, dined at 3 o'clock in Summer's Hotel, Mr Anderson of Meadow Bank in the chair, when the usual loyal, patriotic, and professional toasts were disposed of in good style.

ODDS AND ENDS AT THE GREAT SHOWS.

THE stove and greenhouse plants at Manchester are wonderfully fine, Mr Baynes and Messrs Cole & Sons standing unequalled in cultivation. The exhibition altogether was a great success, and Mr Findlay and his able coadjutors were warmly congratulated, and well they deserved it. I know you are getting notes of this exhibition from an admirable writer and judge, so adieu to Manchester for the present.

The great Zonale Geranium meeting at South Kensington will also be duly reported by your quite-to-be-relied-on London correspondent; but as a country looker-on, with a knowledge of what is wanted in the country, I say that the coming favourites in the golden tricolors are Achievement and Ellie Brales, two remarkably fine things; Mrs Grieve, Prince of Wales, Princess of Wales, Howard Ashton, Edith Stuart, Dr Livingston, with a very dark blackish zone, beating Mrs Dix; and Mrs G. Hanbury, possessing a leaf of great quality, a good deal of yellow and very little red. It is a distinct and good kind. Miss Burdett Coutts is fine amongst the silver tricolors. In the bronze section Countess of Kellie stands out as distinct, and Criterion, Cleopatra, Black Prince, and Antony are all A 1: a pretty little silver-margined kind, "Bridal Bouquet," struck me as a capital dwarf variety for edging. There were other fine kinds which well deserve any notice that could be given to them, but the few I have named are extra fine. What a glorious ornamental hardy herbaceous plant *Spiræa palmata* is!—another everybody's plant. Messrs Veitch & Son exhibited

Gloxinias, M. Brogniart, M. Carcenac, Sarah, Gem, Star, and Bergerette, all very beautiful and distinct, easily picked out from a host of others, and may the lovely beautiful new *Croton Wisemani* soon be sent out, for it is a lovely plant. *Davallia paroula* is an exquisite little Fern. *Passiflora fasciata*, sent by Mr Ambrose Verschaffelt of Ghent, is very distinctly and handsomely variegated in foliage, and no plant excited more genuine admiration than the very charming and almost forgotten *Tropaeolum polyphyllum*, a hardy tuberous herbaceous plant exhibited by Messrs J. & C. Lee. A word more very much in favour of the fine variegated *Hemorcallis Kwanso* fl. plmo., also seen in such fine trim at the Ghent show, and some exceedingly fine new varieties of Ivy-leaf Geraniums from Mr Bull. Messrs E. G. Henderson & Son's wonderful collection of 101 bedding plants, in neat square boxes of uniform size, won the admiration of everybody. All who saw these, and the fine but smaller collections at Manchester, Leeds, and York, will see how desirable it is that such things should be encouraged at our exhibitions.

The York Exhibition was a great success, and here Messrs Cole & Sons and Mr Bamis again exhibited their magnificent plants in great strength. The Geraniums from Henry Stuart, Esq., and Mr Edward's Fuchsias were extremely fine. Amongst Orchids, a *Dendrochilum filiforme*, with twenty exquisite drooping racemes, and a very fine *Dendrobium formosum giganteum*, with thirteen extremely fine flowers, were the gems. Mr J. Brownshow of Beverley sent a basket of a very handsome seedling Strawberry, "*Ne plus ultra*," a large rich-coloured fruit of fine form and very firm. It is of medium flavour, very similar to Keen's, and is what we may call a market-gardener's first-class Strawberry, and a good forcer. No Strawberry will travel better, and it deserves a place in every garden.



FLORAL DECORATIONS OF APARTMENTS IN PARIS.

"ENTERING the Salle St Jean, the eye was immediately attracted by a charming display of vegetation at one end; while on the right, and immediately in front of and around a large mirrored recess, was a very tasteful and telling display made as follows:—In front of the large high mirror stretched forth a bank of moss, common moss underneath, and the surface nicely formed of fresh green *Lycopodium denticulatum*, the whole being dotted over with the variously-tinted Chinese *Primula*—a bank of these plants, in fact, high enough in its back parts to be reflected in the mirror with the taller plants which surrounded it, gradually falling to the floor, and gradually merging into the groups of larger plants on either side of the bank, the whole being enclosed by a low gilt wooden trellis-work margin. Then the groups at each side contrasted most beautifully with this. Green predominated, but there was a sufficiency of flower, while beauty of form was fully developed. In the centre and back parts of these groups were tall specimens of the common Sugar-cane (*Saccharum officinarum*), which held their long and boldly-arching leaves well over the group; and these were supported by Palms, which threw their graceful lines over the specimen *Camellias*, these being in their turn graced here and there by the presence of a *Dracena* or Dwarf Palm; and so down to the front edge, where *Cinerarias*, forced bulbs, *Primulas*, and Ferns, finished off the groups, all very closely packed, so that neither the lower part of the stems nor a particle of any of the pots could be

seen—any of the interstices that happened to remain between the bases of the plants being completely filled with fresh green moss, which also pressed against the little gilt trellis-work which enclosed the whole, so that from the uppermost point of the bare leaves to the floor nothing was to be seen but fresh green leaves and graceful forms enshrouding the ordinary flowers of our greenhouses, which are infinitely more attractive when thus set in the verdure of which nature is so profuse, and which is always so abundant where her vegetable beauties are at their highest.

“A scene such as this explains the prevalence of these graceful and noble-leaved plants in Paris gardens and in Parisian flower-shops and windows, for you may frequently see graceful little *Dracænas* ornamenting windows there; and as they look as well at Christmas as at midsummer, I need hardly suggest how highly suited they are for purposes of this kind. The number of *Dracænas* cultivated in and around Paris is something enormous; and among the newer species of these—not alluding to the coloured-leaved kinds—are some that combine grace with dignity, as no other plants combine them. They are useful for the centres of noble groups of plants in their larger forms, and the smaller species may be advantageously associated with the Maidenhair Fern and *Cinerarias* of the conservatory bench. They are of the greatest utility in these decorations, and are largely used in all parts. So are most kinds of fine-leaved plants, from *Phormium* to *Ficus*. So, too, are young Palms cultivated to an enormous extent about Paris, and every green and gracefully-leaved plant, from the Cycads to the common trailing Ivy, used a good deal to make living screens of. With such plants they have but little trouble to find materials for this kind of embellishment. The wide staircase ascending from the *Salle* had also a charming array of plants so placed that the visitors seemed to pass through a sort of floral grove, fine-leaved plants arching over, but not rising very high, and having a profusion of flowering things among and beneath them. As the bank of *Primulas* and the groups of tall plants were placed opposite this staircase, and reflected in the great mirror behind, the effect when descending the staircase was fascinating indeed. A still more noble effect was produced in a *salle* near the great dancing-saloon, and through which the *invités* passed to the magnificent ball-room. Against each pillar in this saloon was placed a tall Palm with high and arching leaves, as in *Seaforthia elegans*, and others with longer leaves and pendulous leaflets. These meeting, or almost meeting across, produced a very graceful and imposing effect, while around them were arranged other plants, distinguished either by beauty of leaf or flower, and the groups at each pillar connected by single rows of dwarf plants, closely placed, however, and well mossed in, as in the case of the more important groups. The very close placing of the plants is the peculiar part of the arrangement. You cannot notice any dividing marks or gaps, yet there was no awkward crowding. The fact is that, with an abundance of plants distinguished by beauty of form, it is almost impossible to make a mistake in arrangement.

“These arrangements are infinitely varied at the great balls, both public and private; rocks, water-grottoes, &c., are occasionally introduced, and very extensive arrangements sometimes made in the open air, in the gardens behind the great houses, &c. The Tuileries gardens, at the time of the great fêtes, were largely decorated in this way, each of the numerous lamp-posts having a bed of flowers around it, and the whole scene being turned into a flower-garden in a few days. The quantity of flowers required to do this was something enormous; and when it is considered that at that time great quantities of plants were arranged, both indoors and out, in other great public and private buildings, some faint idea may be formed of the enormous extent to which plant-decoration is carried out in

Paris. To go more fully into details would be useless; very few words serve to explain the difference between their and our system of decorating with plants. It simply consists in the use of a far greater number of fine-leaved subjects on their part. This, of course, has a great effect in popularising the use of plants in houses; for how can you make beautiful arrangements in this way if you ignore the higher beauties of plant form? The fashion, as carried out in such instances as the above, carries its influences through every grade of society. Thus you see people with a graceful *Yucca* or young Palm, or New Zealand Flax, in their windows and rooms, who, if in England, would not, in all probability, have had a distinct idea of the existence of such things. The extent to which this taste for floral decorations in the Hôtel de Ville is carried, may be judged from the enormous number of plants grown at Passy for that purpose—the New Zealand Flax, which is so very useful for indoor or outdoor decoration, being grown to the extent of upwards of 10,000 plants, and Palms, and all plants with fine leaves, in great quantity. The demand for use in private houses gave rise to a large and special branch of trade in many of the nurseries—one Versailles cultivator annually selling 5000 or 6000 plants of *Dracena terminalis* alone.”—Extracted from GLEANINGS FROM FRENCH GARDENS. By WILLIAM ROBINSON, F.R.S. With numerous illustrations. Warne & Co., London.

We advise all our readers who are anxious to learn what are the strong points of French horticulture, to procure Mr Robinson's book, and peruse it for themselves. In it they will find amply detailed all that struck him as being worthy of note.



REVIEW.

SELECT FERNS AND LYCOPODS, BRITISH AND EXOTIC. Comprising a Description of Nine Hundred choice Species and Varieties, with Illustrations. By B. S. WILLIAMS, F.R.H.S.; Victoria Nursery, Upper Holloway, London. Published and sold by the Author.

Mr Williams's earlier works on Ferns and Orchids have been well received, as those of a thoroughly practical man, perfectly acquainted with the subjects he professed to treat upon. They have therefore passed into standard works. The volume before us is of a much more elaborate character than his first, and we predict for it an equally wide circulation. His introductory remarks and cultural directions are as interesting as they are sound and judicious. Of Tree-Ferns our author writes:—

“The species from Australia, Tasmania, and New Zealand, make beautiful objects for the decoration of cool houses. I have many in the conservatory here from 10 to 18 feet in height of stem, and mixed as they are with a general collection of other ornamental foliage and flowering plants, the effect is beautiful. When placed in pairs down the centre of a house, and set sufficiently wide apart to allow shorter plants to stand between them, alternating with pairs of such plants as *Dracenas*, and so that their fronds just meet over the pathway, thus forming an avenue, they have a stately and grand effect. If a structure is erected for their special culture, they present a wonderful sight. To economise glass, I would have the bottom of such a house 3 or 4 feet below the ground-level, accessible by flights of steps; the bottom should be well drained, and the

trees either planted out in places prepared for them, or plunged to the level of the rims of the pots. Winding walks can be laid out round and between them; the floor can be planted with small growing Ferns and Sellaginellas, and many species of *Hymenophyllum* and *Trichomanes* will thrive admirably on the stems of the arborescent species, the whole forming a grove of enchanting beauty. Another thing, however, is wanting to make such a spot perfect. Grand as such a scene is, and however much pleasure one derives from admiring them from beneath, to be fully appreciated they must also be seen from above; and in a structure of this kind, a gallery, either constructed of stone, forming a rugged and natural-looking ascent, which may have all its crevices planted with Ferns, or a light iron structure, should be erected for the purpose. From this point of view the appearance of these noble plants is so totally different from what is seen of them from below, that if never seen it can scarcely be conceived."

As an interesting combination of the cultivation of Ferns with Orchids, we quote the following passage:—

"Mr Penny, gardener to H. Gibbs, Esq., Regent's Park, has introduced Ferns among his cool Orchids; and I must say I never saw *Odontoglossums*, *Lycaste Skinneri*, and many other cool Orchids, doing better. I noticed fine specimens of *Lomaria nuda*, *Todea superba*, and many specimens of *Adiantum*. Over them were suspended Orchids on blocks, and the moisture rising from the Ferns seemed to make them root out and grow more freely. Also in a lobby separating the Orchid-houses some fine specimens of such Ferns as *Gleichenia flabellata* and *dicarpa*, *Adiantums*, &c., were growing, and producing a charming effect."

We strongly commend this work to all who take an interest in the delightful natural order of plants of which it treats.



Notices to Correspondents.

SIR,—Can you inform me whether "*Eurybia ilicifolia*" has been tried as an edging plant, and with what success? It propagates freely by pegging and layering down, and if cut by the frost it comes up from the roots. It proves a fine contrast to most of the bedding plants in general use, and has the great advantages of being perennial, evergreen, neat, and showy when in flower. It also bears clipping. Is it quite killed in a severe winter? J. G.

[If any of our readers have tried the above plant for bedding purposes, will they kindly give us their experience of it?—ED.]

AMATEUR.—By the following management my winter Apples are kept quite firm till June, and sometimes July: After they are gathered they are laid in a heap for three weeks, then the sound ones rubbed and put into large earthen jars; through the winter they are occasionally rubbed and changed from the damp jar to a dry one, any bad ones being carefully taken out. A SUBSCRIBER.

W. L.—We can only say that we have purchased the Vine you refer to on the faith of the awards made to the fruit of it by the Fruit Committee of the R. H. S., and have planted it in an early-house. The plant was not strong, but it is making good progress.

J. GILLEY, BEVERLY.—The male variety of *Garrya elliptica* is the only one in general cultivation. It was introduced from California by Douglas in 1818. The fruit of the female plant is a two-seeded berry, somewhat like that of the Hawthorn in size and shape. If any of our readers know of the existence of the female plant in this country they will oblige by letting us know, for the information of our correspondent.

E. C., MALVERN.—In the July Number of the 'Gardener' of last year, at page 272, you will find a paper that will meet your case.

AN OLD PLODDER.—There has been much written about the subject of your letter that had very little point. We recently received a letter from a gentleman in Lancashire from which we are tempted to make the following extract, as being a very sensible view of the matter:—

"I notice your observations upon the *extension* system. What distinction can there be 'twixt a Vine expending its sap yearly in *renewal* of wood, &c., under culture and close pruning, and exhausting its sap in the formation of an extended Vine? Is it not simply a question of foliage and root-action and border room! a *domesticated* or *natural* Vine at your choice—a standard or a dwarfed Vine at your pleasure! For pruning (cutting and wounding), if *admissible* upon *extension* Vines—and no gardener will deny that *need of training*—must be allowed in the *object* of restricted Vines, and so to the *DEGREE* of *that object* be a legitimate art in Vine-culture. 'A distinction (of degree) without a difference!' Would not growing varieties of Grapes on *one* Vine by grafts, and relying on *one* root or stock, be like carrying your eggs *all* in one basket! Better have your crops distributed on moderately restricted Vines. Would not a restricted Vine with *border renewals* live as long as an extended Vine in *unlimited border or land* room? A question of *FOOD* alone.

J. F. S."

J. T. S.—Give your house of Lady Downes plenty of air—in fact, keep it like a greenhouse in this respect while the grapes are stoning—and the disease you complain of will give you no trouble. We are aware that writers have assigned the cause to the state of the roots; but follow our advice this year, and you will then be able to decide for yourself as to the cause of the decay of the berries.

AN AMATEUR GRAPE-GROWER.—Do not remove your healthy, vigorous, young Vine of Lady Downes to make room for Pince's Black Muscat, but inarch the latter on the Lady Downes as a stock, and next year you will have a Vine as strong as you could expect it to be two years hence if you removed the Lady Downes and planted the other; besides, a Vine planted in a border some years after it is made, never thrives like those planted when the border is fresh made.



THE GARDENER.

AUGUST 1868.

THE ROSE.

CHAPTER I.



HAVING grown Roses for twenty years so successfully that I have won more than thirty cups "open to all England," with a multiplicity of money prizes—having originated the first show of Roses, that is to say, of Roses only—and having attended since that time nearly all the great Rose shows, either as a judge or as an exhibitor,—I ought to have something to tell worth hearing to those who love the Rose. I will try to tell it, as Bossuet preached, *sans étude, familièrement, de l'abondance du cœur*.

De l'abondance du cœur—these words shall be the text of my sermon, because he who would have beautiful Roses in his garden must have beautiful Roses *in his heart*. He must love them well and always. To win, he must woo, as Jacob wooed Laban's daughter, though drought and frost consume. He must have not only the glowing admiration, the enthusiasm, and the passion, but the tenderness, the thoughtfulness, the reverence, the watchfulness of love. With no ephemeral caprice, like the fair young knight's, who loves and who rides away when his sudden fire is gone from the cold white ashes, the cavalier of the Rose has *semper fidelis* upon his crest and shield. He is loyal and devoted ever, in storm-fraught or in sunny days; the first upon a summer's morning to gaze admiringly upon glowing charms, and the first to tread upon the deep white snow to discover anxiously what harm is done, and to give what help he

can. And as with smitten bachelor or steadfast mate the lady of his love is lovely ever, so to the true Rose-grower must the Rose-tree be always a thing of beauty. To others, when its flowers have faded, it may be worthless as a hedgerow thorn : to him, in every phase, it is precious. I am no more the Rose, it says, but cherish me, for we have dwelt together ; and the glory which has been, and the glory which shall be, never fade from *his heart*.

Is it rare or frequent this fond and complete affection ? Go to one of our great exhibitions, and you must surely bring the conviction home, that true love, however rare in the outer world, may be always found "among the Roses." From all grades and epochs of life, what vows of constancy, what fervid words ! "Sir Thomas and I are positively going to ruin ourselves with a new Rosarium." "As soon as I get home," says a country rector, "I shall plant an acre of my glebe with Roses." There you may see a Royal Duchess so surprised out of her normal calmness, that she raises two pale pink gloves in an ecstasy of surprise, and murmurs, "Oh, how lovely !" over Maréchal Niel. There a Cabinet Minister stands tiptoe to catch a glimpse of his brother senator, *Vaisse*, and wishes he had a neck as long as Cicero's. Obstructing his view with her ample form and bountiful bonnet, our old friend Mrs Brown, who has just had "one drop of the least as is," informs the public that she "knows for facts that Mr Turner of Slough has a dead horse under every Rose-tree, and Pauls & Sons has hundreds of young men with gig umbrellas standing over their Roses when it rains heavy." Mrs Brown is delighted, like all around, and "means to tell Brown, as soon as ever she sets down in her own parlour, that Marshal Niel all over the house, and Sulphur Terry round the back door, grow she must and will. But, goodness me," she suddenly exclaims, "what a mess o' them reporters !" No, my dear madam, they are not reporters, only spectators, putting down in their note-books the names of Roses, with an expression of eager interest which says, I must have that flower or die.

Every year this enthusiasm increases. It is not easy to collect reliable statistics ; some shut their mouths closely ; some open them so widely as to justify the amusing sarcasm of my reverend and roseate brother, Radclyffe, "When they count their trees, they include the Aphis ;" but I have obtained trustworthy and interesting information from some of our chief rosarians, who have kindly answered my inquiries in a fraternal and friendly spirit. Without mention of names or minute details, I may state that these all bear witness to a most extensive and progressive enlargement of the demand for Roses. The largest of our wholesale growers writes to me that he has more than twenty acres of Roses, and that his stock of Briars and Manetti, with

Roses on their own roots and Roses in pots, exceeds one million. The young but most successful representative of one of our older firms informs me, that their first planting of Rose-stocks, so an old Briar-man tells him, was a lot of 2000, some forty years ago; and that from 2000 they advanced in 1861 to 62,000 Briars. In 1860, he adds, we commenced the outdoor culture of the Manetti with 4000: this year (1867) we have 60,000. Rapid as this increase appears, the same writer goes on to say that he anticipates a time when their present stock will seem Lilliputian in comparison with that which will be required for the home and export trade. I propose to revert in some future chapter to the history of this development, concerning which I am favoured with some very interesting facts by one who has had more to do with it than any living man—my dear friend, Mr Rivers of Sawbridgeworth. Suffice it to say now, that where Roses were grown twenty years ago by the dozen they are grown by the thousand, and where by the thousand now by the acre.

But now comes a most important question,—Have we beautiful Roses in proportion to this great multiplication of Rose-trees? The printer will oblige me by selecting a brace of his biggest and blackest capitals, with which I may reply emphatically, NO. It is indeed, at first sight, a marvel and perplexity, that while the love of Roses is professed so generally—while the demand for Rose-trees has increased so extensively, and the flower itself has every year disclosed some new and progressive charm—Roses should be so rarely seen in their full and perfect beauty. Queen Rosa, in common with other potentates, has greatly enlarged her armies, but how few young officers have as yet distinguished themselves fighting in the wars of the Roses. Field-marshal Rivers still commands from his hill at Sawbridgeworth. The names of the generals who were eminent when I first joined as Cornet—Paul and Wood and Lane and Francis—are still famous in our ears. Mitchell and Cranston and Cant have long been men of renown; and though Turner and Keyver have joined more recently the Royal host, and, rushing at once to the van, achieved the first honours of victory, they are well-known veterans in other fields, and men of war from their youth. It is the same among the amateurs as with the professionals, among the volunteers as with the regular army. The old champions ride into the lists and hold their own against all comers; the new aspirants for the smile of our Queen of Beauty go home, with one exception, the gallant Knight of Sileby, discomfited. They may say as they enter the arena, with the gladiators of old to the emperor, or, in absence of an emperor, to the policeman at the entrance of the exhibition, *Morituri te salutant*.

We must pass from the public Rose show to the private Rose garden

to see in its saddest phase the difference between what is and what ought to be, the feeble harvest of good Roses from the broad acres of good Rose-trees. These remind us of Martial's description of his works, "*Sunt bona, sunt quædam mediocria, sunt mala plura.*" Collectively, we can hardly say of them, as an Edinburgh Reviewer (was it Sydney Smith?) of a volume of sermons, criticised in the first number of that work, "*Their characteristic is decent debility.*" As a rule, the amateur rosarian has made about as much progress as George III. with his fiddle. After two years' tuition, the King asked his tutor, Viotti, what he thought of his pupil: "Sire," replied the professor, "there are three classes of violinists; those who cannot play at all, those who play badly, and those who play well. Your Majesty is now *commencing to enter upon the second of these classes.*" There is not a garden nowadays, of any pretension, which has not its collection of Roses, and yet there is not one garden in twenty where the flower is realised in its beauty. I have scarcely known at times whether to laugh or weep, when I have been conducted with a triumphal air by the proprietor to one of those dismal slaughter-houses which he calls his rosary. The collection is surrounded by a few miserable climbers, justly gibbeted on poles or hung in rusty chains, and consists of lanky standards, all legs and no head, after the manner of giants, or of stunted "dwarfs," admirably named and ugly as Quilp; the only sign of health and vigour being the abundant growth of the Manetti stock, which has smothered years ago the small baby committed to its care, but is still supposed to be the child itself, and is carefully pruned year after year in expectation of a glow of beauty. There is no beauty, and there never will be, for the florist; but to the entomologist what a happy peaceful home! There can be no museum in all the world so exquisitely complete in caterpillars, so rich with all manner of flies. And oh! if clever "M. J. B." could only see the fungus and the mildew, what leaders we might have in the 'Gardeners' Chronicle' when he had toned down his joy! For me there is no solace in these charms. I stand sorrowful and silent, like Marius among the ruins, until my companion wishes to know whether I can tell him why that wretched Charles Lefebvre behaves so disgracefully in his garden? On reflection, perhaps I can. Charles Lefebvre is placed, like Tityrus, "*sub tegmine fagi,*" under the drip and shadow of a noble beech-tree, whose boughs above and roots beneath effectually keep all nourishment from him. And do I know why Charles Lawson, Blairii 2, and Persian Yellow never have a flower upon them? Simply because they are pruned always, as no man with seeing eyes could prune them twice, so closely that they make nothing but wood. The single standards, again, are grassed up to the very briar, except where a circular span is

left for "just a few bedding-out things,"—leeches draining the life-blood of the Rose. It is Mrs Hemans, I think, who sings,—

"Around the red Rose, the *Convolvulus* climbing,"

and it sounds sweetly pretty, and would be the loveliest arrangement possible, only that, unfortunately, it is death to the Rose—death to that queen who brooks no rival near, much less upon, her throne. Look, too, at those vagabond suckers clustering like Jewish money-lenders or Christian bookmakers round a young nobleman, and stealing the sap away. The earth is set and sodden; no spade nor hoe has been there. As for manure, a feeling of profound melancholy comes over us, as over Mr Richard Swiveller, when he discovered that the Marchioness had passed her youthful days in ignorance of the taste of beer. We know that they have never seen it, and yet they are expected to bloom profusely; and when they are covered, not with Roses, but grubs, the nurseryman, or the gardener, or the soil is blamed. Then there is dole in Astolat, and a wailing cry over dead Adonis. "Is it not sad that we cannot grow Roses? We have spared no trouble, no expense, and we do so dote on them!"

The last time I heard a howl of this kind I felt myself insulted as a lover of the Rose and of truth; and instead of yelping in concert, as I was expected to do, I snarled surlily: "You have taken no trouble which deserves the name; and as to expense, permit me to observe that your fifty Rose-trees cost you £5, and your sealskin jacket £20. You don't deserve beautiful Roses, and you won't have any until you love them more." If I am accused of discourtesy to the fair sex (she was not very fair, my reader), I can only plead that I have been far more explicit with the male specimen of pseudo-rosist. "I say, old fellow," remarked to me a friend as we rode together in the Row, and with a tone which, though it pretended a cheery indifference, was fraught with rebuke and anger, "those Rose-trees which you recommended me to get turned out a regular *do*. Cost a hatful of money—precious near a *tenner*, if not all out—and, by Jove, sir, our curate at the county flower-show came and licked them all into fits!" "Robert," I responded (I was too indignant to address him Bob, as usual), "I never in my life recommended a person of your profound ignorance to have anything to do with Roses. You asked me to give you a list of the best, and I did so reluctantly, knowing that you had neither the taste nor the energy to do them any justice. As to the outlay, the animal on which you have recklessly placed yourself, and whose hocks are a disgrace to this park, cost you, I know, more than eighty guineas; and for a tithe of that sum, without further supervision or effort, you expect a beautiful Rose-garden. I rejoice to hear that the curate beat you, just as

that earnest boy on his nimble pony is out-trotting at this moment your expensive but tardy steed."

Not a *soupcçon* of sympathy can I ever feel for the discomfiture of those Rose-growers who trust in riches. They see lovely blooms at the Rose-shows (yea, the Duchess of Kensington said that they were lovely)—selected, probably, from fifty thousand trees, and the results of excellent culture, untiring vigilance and care—and they say, We will have these Roses for our own forthwith, and in abundance. They have only to put down the names, give an order, and sign a cheque, to buy as they buy chairs and tables. They go home and tell their gardener that they have ordered a most splendid collection of Rose-trees, and that they quite expect him next summer to have the best display in the county. From my heart I pity that gardener. They might as well have brought him Bob's hack, and told him that if he could not win the Derby and the St Leger with him they really must find somebody who could. He is not even allowed to choose a situation. The tall ones are to be planted on each side of the broad walk, and the little ones opposite the boudoir window. The broad walk may be as black as a common, or, under the shade of melancholy boughs, as dank as a mausoleum; and the dear little bed opposite the boudoir never sees the sun until mid-day, when it is grilled for three mortal hours, and then given back to gloom. So there the poor Rose-trees stand—through the winter, *ludibrium ventis*, or without any air at all, and in the spring a *rialto*, *rendezvous*, common-room, and tap for all the riff-raff of the insect world—an infirmary for all the diseases which the neglected Rose is heir to. Some few, perhaps, may brave all, and bloom, but they no more resemble the glorious flowers which my lady saw at Kensington or the Crystal Palace, than my little boy's toy railway-train resembles the Scotch express.

In my next chapter I will tell what may be done in a very small garden, by a very poor man, who *really* loves the Rose.

S. REYNOLDS HOLE

FRUIT-CULTURE.

(Continued from page 284.)

THE MELON.

Character and History.—*Cucumis melo*, the common Melon, belongs to the same genus as the Cucumber, *C. sativus*, the Colocynth plant, *C. colocynthis*, and the Water Melon, *C. Citrullus*, and belongs to the natural order Cucurbitaceæ.

By Galen the Melon is termed *Melopepon*, and by Dioscorides *Pepon*. The Greeks still term it *Peponia*, the Italians *Meloni*. The Spaniards in the sixteenth century first called it *Melon*, by which name it is now known in France and England. From that very useful work, 'The Treasury of Botany,' we learn that De Candolle was of opinion that the species was originally confined to the valleys in the south of the Caucasus, and chiefly to the southern coasts of the Caspian. The Melon has been cultivated in Asia since, and no doubt before, the dawn of history. It was introduced, according to Pliny, into Italy early in the first century, and he gives a description of its cultivation there, so that the Emperor Tiberius might have it at his table all the year round. It was not, however, cultivated generally over Europe till about three hundred years ago. It passed from Italy into France and Spain, thence into England, where, according to some authors, it has been cultivated for nearly three hundred years. Persia has long been, and still is, noted for the excellence of its Melons, which are extensively cultivated there. Some of the nobility of that country keep from 10,000 to 20,000 pigeons, chiefly for manuring their Melon beds, pigeons' dung being considered the best for that purpose. Bokhara is also famous for its Melons, as we learn from 'Burnes's Travels' in that country. He describes the Melon as the choicest fruit of the country.

Of Melons there are distinct species recognised in those countries, which the natives classify as hot and cold. The former is the Musk-scented Melon of India; the latter is what is known as the Turkestan Melon, resembling in appearance the Water Melon. It is sometimes grown to a great size, three feet in circumference, and their flavour is said to be exquisite. So fine are these Turkestan Melons, according to Burnes, that the Melons of India, Cabool, Persia, and the celebrated Melons of Ispahan, bear no comparison with them. The best of these, he says, is named *Kokechu*, and has a green and yellow coloured skin. Another fine variety is named *Ak nubat*, which means white sugar-candy. It is yellow and exceedingly rich. The Winter Melon of the same country is of a dark green colour, is called *Kara Koobuk*, and is said to surpass all others. Bokhara seems to be the cradle and home of the Melon, having a dry climate and great facilities for irrigation.

It seems a subject for regret that such fine varieties of this fruit should be all but unknown in this country, seeing that, with the appliances now at command, any sort of climate can be had, during the summer months at least.

Cultivation under Glass.—In this country it may be said that the Melon cannot be cultivated except under glass, either in frames or pits, with the aid of bottom-heat to some extent; therefore we will confine our remarks exclusively to cultivation under glass.

Preparation of the Young Plants.—It is generally admitted that Melon plants raised from seed more than one year old have a greater tendency to fruitfulness than such as are raised from seed recently grown. We knew an old gardener who carried his Melon seed a year in his pocket before he sowed it, and believed it was benefited thereby; certain it is that he grew fine crops of Melons.

There is no place more suitable for raising young Melon plants than a common dung frame if a good temperature can be maintained, *i.e.*, 70° by night, rising to 80° during the day. The seed should be sown in shallow pans not more than two inches deep; the soil pure virgin loam, and in a state of medium moisture. The seeds should be placed one inch apart every way on the surface of the soil, and have a covering of a quarter of an inch of the same soil placed over them. The pans should have no drainage, nor do they require holes in their bottoms, as the seed should never be watered till the plants are transplanted into the nursing-pots. In this way they come up stocky and firm in their growth, and transplant far better than when watered in the seed-pans. Prepare pots for them about 5 inches in diameter, have them drained in the usual way, and above all see that they are washed clean before being used. Fill these pots half full of soil the same as the seed was sown in, and place two of the young plants equidistant from each other and from the sides of the pots, and just cover their roots with soil, but do not fill up the pots at once. As the plants are transplanted as soon as their seed-leaves are fully expanded, their stems will elongate, and they should be earthed up by degrees as they grow, but very little water should be given at the root till the plants have more foliage expanded. Treated thus, they will make much firmer plants than if swilled with water when quite young. When the plants have made four joints the points of their leading growth should be pinched off, if they are to be grown in frames along the surface of the earth; but if they are to be trained to wires in Melon pits or houses in the manner of Vines, they should not be stopped while in their nursing-pots. Melon plants should never be allowed to get pot-bound ere they are planted out where they are to fruit. As soon as the roots have got such a hold of the soil in the pots as to hold it together when turned out, they are ready for planting in their fruiting quarters.

The common dung bed and wooden frame with glazed lights was the system of Melon culture with which we first became acquainted; and as thousands have no other appliances still, we shall refer to it first. The stable-manure and, when at hand, leaves should be thrown into a heap to ferment, and get rid of the ranker portion of its ammoniacal gas. When it has become what gardeners call sweet—that is,

when the steam from it is no longer pungent either to eyes or nose—it may be formed into a bed, which should be 2 feet wider, and the same longer, than the frame to be placed on it. Where turf can be had readily, the whole surface of the bed should have a layer over it, with the grassy side next the manure. On this the soil should be laid in a ridge along the centre, 2 feet wide and 1 foot deep. When it has attained a temperature of 80° with no symptoms of more violent heat than would raise it to 100°, the plants may be planted, one pot with two plants in it, in the centre of each light, if the lights are five feet long; when narrower than this two may be less suitable than one, but have the advantage of securing a crop when one might fail through that pest of Melon-growers, canker of the stem at the surface of the soil.

The soil should be good sound calcareous loam that has been stacked for one year, with no admixture of manure; and if it is reasonably moist, we would rather shade for a day or two after planting till the roots get into action than water for a time. As soon as it is evident that the plants require water to keep their growth up to a healthy state, they should have it, but avoid wetting their stems near the earth. Keep the atmosphere of the frame moderately moist by the use of the syringe twice a-day, morning about 8 o'clock and in the afternoon, shutting up with a sun temperature of 95°. As a rule each plant will run out from four to six laterals; let these run on till they have nearly touched the sides of the frame, by which time the whole surface of the bed should be covered over with 1 foot of soil, in the process of earthing up as the roots of the plants advance. These laterals at this stage should be stopped by the finger and thumb, and they will at every joint push out lateral shoots, on nearly all of which will be found a female blossom-bud. These sub-laterals may be stopped three joints or leaves beyond this embryo Melon; and as soon as the flower of it is fairly open, it should be impregnated by the pollen from a male flower on the same or any other plant in the frame. This is what is termed "setting the Melons," and by a bygone race of blue-aprons was made a great mystery of, for initiation into which every tyro had to pay black-mail. Happily these days are gone, and much, if not all, of this empiricism which prevailed amongst gardeners as amongst other professions that dealt with the hidden laws of Nature. As soon as the young Melons give signs that they are set by rapidly increasing in size, they should each have a piece of slate, or what is better, of tile, placed under each, to keep them off the damp soil. Eight good Melons we think a good crop for a 5-foot light—more may be grown, but it will be at the risk of their being small. When the crop is heavy, and the Vines not very strong, an occasional watering with liquid manure may be given, but always in a tepid state.

When the frame gets crowded with sub-laterals, it becomes necessary to prune out a number of them, so as to allow a free circulation of light and air amongst the leaves. Slight shading will be found advantageous during very hot sunshine. As the fruit ripen they should be cut and removed to the fruit-room till wanted for table. When the plants are vigorous and healthy after the crop of fruit is all cut, they may be pruned back considerably, the soil may be stirred on the surface, and the whole bed get a good watering, a fresh lining applied, and the lights kept closer for a time, and they will begin a fresh growth of Vines, and frequently bear a second crop little inferior to the first.

W. T.

(*To be continued.*)



NOTES ON GREENHOUSE PLANTS.

FERNS.

(*Continued from page 289.*)

RESUMING our subject, the young Ferns were left at that stage when the first fronds are indicated ; and granting that all progresses favourably, the interior of the case will appear a dense carpet of various shades of green, bristled over with those puny representatives of fronds already described. Let them have every encouragement to make fresh leaves, by maintaining a moist and heated atmosphere, admitting air now daily and constantly in proportion to sun-heat, economising sun-heat by closing early in the afternoons after sprinkling the bed lightly over with tepid water. Thus husbanded, little else is necessary until they have attained to that degree of strength qualifying them for transplanting (after being singled out) around the edge of thumb-pots in fours and sixes, according to their vigour of growth, using a portion of the same soil for this purpose as was used for the seed-bed.

Method of Separation.—This is nicely accomplished by means of a pointed stick, inserting it beneath the plants, and raising a cluster of them at a time ; and while carefully separating the individual plants with the fingers, take notice that as much soil adheres to their roots as possible. Of course this operation should be gone through in a warm shaded place, and if at any great distance from the potting-shed, better bring a box of the compost to the plants than endanger them by exposure. Plant the seedlings with a dibble very tenderly, and allow the soil to be comparatively slack in their pots, which will

enable the young roots to make easy way for themselves. Thoroughly moisten the soil by going a few times over them with tepid water, administered by a fine rose, but being careful that the plants are not submerged among water and soil, and left buried in the soil. The seedlings may then be congregated into one frame or divided into groups in hand-glasses (inside the house), and kept close and shaded until it is ascertained that root-action has again commenced by the sprightly look of the Ferns, and sign of new growth. When this is the case, shading may then be dispensed with by degrees, and air admitted sparingly until they are accustomed to exposure. Continue thus to supply air daily, water moderately by sprinklings, never permitting the soil to get crusted or dry, shutting up early in the evenings with a warm moist atmosphere about them; and when their pots are partially filled with roots, then each will demand a pot for its own accommodation.

Soil for General Culture.—A compost composed of the following ingredients we have found to answer well: Two parts fibry peat, one part rich fibry loam, one part silver sand, and one part equal portions sphagnum moss and rotten beech-wood, chopped well up and incorporated by putting the whole through a $\frac{1}{2}$ -inch riddle, reserving the rougher parts to cover the crocks in the pots with.

In addition to the foregoing mixture, when the plants have attained to middling dimensions they will not object to an eighth part of the whole being old mushroom-bed dung, which ought to be well reduced.

Potting and General Management.—All now being in order, crock their complement of pots, preferring thumb-pots for this shift; provide each pot with a slight covering of that portion of the compost reserved for the purpose. Divide their balls carefully while separating, without injuring the roots; and while in the act of shifting, the soil ought not to be pressed too tightly to the roots, but rather sent home with a few strokes on the bench. Potting completed, return the plants to their old quarters, their attendance there being comprehended in a routine of that recommended in their last stage of growth, until they have reached a state which makes it desirable to provide them with pots of larger dimensions. Pots of 3 inches in diameter are the size for this shift. It is most essential that the balls are kept entire while shifting, and that the plants are well stored with healthy roots, seeing the strongest plants may, after a few days' preparation by shading, &c., be planted into vases, hanging-baskets, or for whatever uses it is desirable to put them to, returning the weaker plants to the frame until they in their turn are strong enough for general purposes. Their subsequent requirements may be summed up in a constant attendance as regards watering at the roots, syringing overhead occasionally, dis-

placing dead leaves, turning to the sun, thereby attaining to well-balanced specimens, affording larger shifts as soon as the roots have netted the interior of the pots.

Diseases and Insects.—Ferns, as a whole, are a healthy race of plants, and seldom affected with malady or distempers so prevalent among many other genus of plants ; but, withal, some of the tenderer species are subject to disease in different forms. Mildew sometimes attacks them when the soil is allowed to get saturated and sodden, and when exposed to an ungenial atmosphere. The cause of the disease in this case may suggest its own cure by avoiding such treatment, and a little portion of sulphur dusted over the affected parts has a healing tendency. But should the disease be permitted to overspread the whole plant, it is difficult to find a remedy. Green-fly at times gets a footing, even to entire possession on occasions ; and to annihilate them requires some care. *Adiantums*, as a class, are particularly subject to the pest, and their tender leaflets are not at all adapted to withstand ordinary smoking ; indeed, under its influence, the leaves get speckled and blotched over with brown, and the fronds damaged to the extent of withering of their leafy parts. This is especially the case with fronds that are young and tender. The best cure is to apply the fumigator for three successive nights in a more modified way, and this will have the desired effect. Other species, and among them *Pteris* and *Aspleniums*, are much troubled with scale, a loathsome pest, which makes its appearance along the main rib (rachis), and, if not subdued, it is sure to spread itself along all the lesser veins. With the earliest indication of scale, the sponge should be brought into requisition, along with a flattened, rounded, and smoothly-pointed stick. The latter ought to be drawn carefully down each side of the main veins, displacing the scales in the operation, after which a gentle application of the sponge over these and other parts of the frond, using water slightly impregnated with black soap, and a syringe with pure water, will complete the business.

Respecting those scales, it should be kept in remembrance that a very few (if allowed to get ripe) have the power of multiplying so enormously as to leave a progeny sufficient to cover and poison a houseful of plants. Each brown or matured scale contains hundreds of minute dust-like particles, which, when broken, let fall a perfect shower ; and when these are brought under the power of the microscope, they are found to be of a dingy white colour, their form oval, and their sides slightly flattened. These germs (if we may name them so) are wafted with the currents of air, and deposited in the crevices of the leaves, and are sure to grow whenever lodged secure.

Those facts before us, we should have a watchful eye to prevent

their spreading, by a free application of the syringe, which is a good preventive, inasmuch as it keeps the foliage clean and beautiful, and washes away all dust, dislodging the newly-fallen scale-germs as well.

A. KERR.

(To be continued.)

GOSSIP ABOUT MUSHROOMS.

OUR Mushroom season begins, if it has a beginning, in November; for we don't forget that Monsieur the Chef wants le Mooshroom all the year, "Boutoes," and "Champignoes larzge;" the fact is, he can't get along comfortably twenty-four hours without them, without our running the risk of getting the blame of spoiling his dinner or some of his dishes. Well, to have Mushrooms in November and to last well through the winter, we make one thick bed about 18 inches deep and 20 feet by 10 superficial on the dry floor of a house made for the purpose, with a low plastered ceiling, and a flue running round three sides of it, with dished flue-covers to hold moisture. The dung for this bed is collected in August and September, put under cover close by, turned over and partially dried. At this season drying can be done excellently without heating the dung, an evil which we avoid when we can. As we can only get the dung by fits and starts, and never a superabundance of it, the bottom of the bed is often of very rough stuff. The bed is made the first week in October, spawned and earthed at once with $1\frac{1}{2}$ inch of old Melon-bed soil, beaten firm but never wetted. This house is just behind the early peach-house, and both are at work together. Very little fire-heat is required in the flue to keep the temperature between 50° and 60° . The ceiling being low, scarce room for a man to stand, keeps the warmth and moisture down near the bed. Throughout the winter the plaster is generally a little wet with condensed moisture. The bed is covered with just a sprinkling of soft hay, and slightly moistened with the syringe occasionally, to imitate the heavy dews on the grass in the open fields in September; for we believe the Mushroom swells quite as much from the moisture which surrounds it, as from the sap it draws from the bed.

An old Northumberland gardener, celebrated in his day for growing the Mushroom, and who yet lives, has told us that he used to cut the turf fresh from the field about $1\frac{1}{2}$ inch thick, and lay it on his beds instead of soil, with the grass side up, and gave air at night with plenty of light at all times. The grass he kept moist with the syringe, and his Mushrooms used to be magnificent. They were submitted to the

first Mr M'Nab of Edinburgh, and the mode of culture he published in a magazine of those days with which he had to do. Our houses being dark, we have never tried the plan. To return to our bed, planks are laid across from flue to flue a few inches above the soil on which to walk and gather the Mushrooms. By maintaining a steady gentle heat, a succession of sufficient quantity for our purpose is kept up until March, not a glut at one time and done with. This bed is never watered, but is cleared out to make way for another of the same size to come in about May. Meanwhile, in a house behind the early vinery, constructed with four brick shelves on arches with cast-iron sides and pillars, two or more of the shelves are made up about Christmas to supplement the waning energy of the large bed in February, and to keep Monsieur quiet until our spring bed comes in. The beds on the shelves of this house are rather thin, and do not last so long as the large bed. The flow and return pipes for the early vinery pass through this house, which keeps it near the right temperature,—sometimes rather high. The plastered ceiling here is also low, and easily kept sweet and moist. Our Dahlia and Gladioli roots are kept on the spare shelf dry, and, although the house is warm and moist, keep perfectly plump and fresh, and do not start into growth a bit too soon; indeed they seem to like their quarters well. The dung for these beds is never in such good order as for the November bed. It has to be heated to drive off the excess of moisture, not having the means of otherwise drying it in winter. By the middle of March we are able again to make up the large bed in good order, which comes in again about the end of April and in strength in May and June. This time it seldom wants artificial heat from the flue, and this time it takes a good watering about the first week in July, and goes on with more or less of a supply until September, with the door thrown open at night and shut through the day in hot weather, but in cool weather open night and day; in fact, the door is the safety-valve by which we usually push or retard the bed to suit our wants, as we have no unlimited supply of manure to produce bushels at all times. About the end of June we make another auxiliary bed, but in another place on the dry floor of a lofty but not open shed, a thick bed round two or three sides of the house. At this time, being scarce of manure, a good thickness of stable litter is put in the bottom, just as it comes from the stable, that is, not shook out, but sweetened, putting on some inches of good droppings, and treating as before. The bed is cool, though covered with hay to keep it moist. Perhaps this bed would be better in the open air, if the season did not prove too cold or wet; here it is safe in all weathers. This bed bridges us and Monsieur into the November bed again, and so again round the circle.

Mushrooms, like other flesh, are heirs to some few ills, the chief of which seem to be the attacks of a parasitic fungus, which overruns the under side of the Mushroom, turning it into one flocky mass, and rendering it hard, useless, and probably unwholesome. The Mushroom, though attacked in the young state, continues to grow. The disease, we have observed, will stick to one part of the bed all through its duration, while wholesome Mushrooms continue to come up all round. We have sometimes thought that much moisture and a too high temperature induce the disease; but it will occur on beds made of the driest and sweetest of manure, and the opposite. Being a parasite, we are inclined to think it will attack the Mushroom under any condition. Another of the Mushroom ills is its liability to the attacks of a maggot, the larva of some two-winged fly, no doubt. Mushrooms growing in the field are very generally perforated by the maggot. They attack it while very young, and grow with the growth of the Mushroom, which is very rapidly, a few days being sufficient to terminate the existence of the whole, at least that phase of it. Indoors the maggot is not troublesome, except in the summer; but if the bed is gone over daily, and the Mushrooms cut in the button state, as they usually are, the maggot does little damage.

The first essential to Mushroom-growing with success is good dung in good order—that is, not too wet or over-heated. We have been obliged to pursue their culture with manure gathered from the fields with scant success. Once we had a quantity of manure sent by railway, but, being delayed at a junction and exposed to heavy rains, it got violently heated and was of course useless.

There is said to be special virtue in the manure of entire horses. Last year we happened to be able to make several beds, a large quantity of the dung being from horses of this description, which were well-fed thorough-bred military chargers; but we really could not discern any advantage from the use of it, the results being neither better nor worse than when ordinary manure was used. It is difficult to understand why this sort of dung should be better than that of other horses equally well fed; certainly the eye, even with the assistance of the microscope, would find it hard to distinguish any outward difference. It reminds us of the anecdote of the Laird of Udny's fool, who had one day found a horse's shoe, and on meeting the minister, whom Jamie liked to catch at a disadvantage, asked his reverence what it was, who replied in a depreciatory tone that it was a horse's shoe. Jamie with great humility rejoined that it was an excellent thing to be learned, as he did not know the difference between a horse's shoe and a mare's one.

THE SQUIRE'S GARDENER.

THE POLYANTHUS.

A FLOWER such as the Polyanthus, with its artistic disposition of colour, unapproached by any other flower, ought certainly without any other argument to commend itself to the attention of the florist. What can be more elegant than a circle of pure gold encircled with a loop like lace around every division of the corolla, and dipping down its centre with a stripe connecting it with the golden eye, the interstices of the corolla being filled with a solid colour? A truss of such flowers, each the size of a florin and forming a perfect hemisphere, is a sight worthy of all the care that may be taken to produce it. To say nothing of the early season of its blooming, or of the delicate perfume it emits, the fact of its being emphatically a British flower entitles it to a Briton's regard.

In the properties laid down for a standard flower, its proportions are required to be mathematically exact. The tube should be one-fifth of its diameter, a fine yellow colour perfectly round and well filled with anthers, forming what is called a "thrum eye," the stigma being low in the tube. Some seedlings come what is called a "pin eye," that is, the anthers are low in the tube, and the stigma protrudes above it: these are rejected by the florist, but might be useful for hybridising if good in every other respect. The tube should be well elevated above the face of the flower, which must be perfectly flat; the eye to be the same width as the tube all round, taking up three-fifths of its diameter, and forming a fine stainless yellow circle; the ground colour, whatever it may be, must be rich, solid, and well-defined, of the same width as the tube, and occupying the remaining two-fifths of its diameter. Beyond this is the lacing, which must go round every division of the corolla, be regular in width, and the centre stripe must cut through the eye, and be of the same shade of colour as the eye. The outline to be circular, smooth, and the indentations between the divisions of the corolla and in its centre to be as slight as is consistent with the character of the flower. The truss should not have less than seven flowers, and the foot-stalks must be of sufficient length and strength to hold them in position. The stem also must carry the truss well above the foliage, and possess sufficient strength and elasticity to support it. The foliage to be of good substance, short, broad, and abundant.

If your able correspondent "Quo" possesses a type of flower in accordance with the above principles, I should have great pleasure in adopting his type as a basis for future experiments.

In continuance of my cultural remarks I would suggest, after planting and before severe weather sets in, that a covering of dried moss

or cocoa fibre be placed around and between the plants, drawing up the foliage erect and covering with the glass protector before mentioned. This will prevent the frost from injuring the roots, and the wet from lodging in the heart of the plant. Early in March these may be removed and the plants top-dressed with the same compost as planted in; they may then be allowed full atmospheric influences to invigorate and give them that robustness necessary to produce a fine bloom.

Having given the routine of my practice for one season, I trust that it may induce some persevering florists to take up in earnest the cultivation, and rescue from the obloquy predicted by "Quo" as a florists' flower, the good, time-honoured, truly British flower, the Polyanthus.

DERA.

MARKET RASEN.

ERRATUM.—At page 291, eighth line from bottom, for "tube of Zantarara," read "tube of Tantarara."



A FEW WORDS ON THE CHRYSANTHEMUM.

THE Chinese are wont to designate their country the Flowery Land; and although national pride and that overweening sense of superiority which mark this populous portion of earth's inhabitants may have something to do with it, yet assuredly we have received abundant proofs of the beauty of their flowers, and the zeal with which they are cultivated. But in the latter point they are far eclipsed by the Japanese—a country, we may say, only recently opened to the knowledge of Europeans; for the strictness with which everything was guarded prevented it from being really known. This was true of its botanical treasures as well as of everything else. True, Van Siebold and Thunberg and others had done much to make these known to us, but it was not until the recent opening of the country to Europeans, and the visits of Messrs Fortune and Veitch, that its real treasures were to be seen. Well do I remember when the Wardian cases of plants collected by the former gentleman reached Bagshot; and who that saw it can readily forget the collection as it graced the opening day of the Royal Horticultural Society's Exhibition? And who that for the first time saw the Queen of Lilies, the golden-rayed *Lilium auratum*, did not feel a thrill of delight and pleasure at its marvellous beauty, while, strangely enough, when the fashion for variegated-foliaged plants has been only a recent one in this country, it was found flourishing in full vigour in Japan?

The inhabitants of London and all large towns are indebted to China and Japan for two plants which, better than any other, are able to endure the smoke, foul air, fogs, dark and chilly days, that spoil the beauty of many a town garden. I mean the *Aucuba Japonica*, or Spotted Laurel, and the *Chrysanthemum*. Some short time since an ambitious desire seized the proprietor of "The Corner" at Knightsbridge to plant the triangular piece in front of Tattersall's well-known establishment. *Araucaria imbricata* and other Conifers were planted, only to be doomed to die, and their place is now supplied by the *Aucuba*; while every year in the Temple Gardens may be seen, in the dreary month of November, a collection of *Chrysanthemums* bearing unhurt the smoke and dust of the neighbourhood. And here again the recent introductions of Mr Fortune are likely to add still further to our enjoyment. In writing this on the *Chrysanthemum*, I write of a flower which everybody may grow, and which flowers at a time of the year when its value is even greater.

There are two distinct classes of Chinese *Chrysanthemums*, with various ramifications—the large-flowered and the Pompones; and in both of these the effects of cultivation are to be as clearly seen as in the production of the Broccoli from the wild Cabbage of the seashore. The original tasselled and other varieties of the Chinese *Chrysanthemum* (*C. Sinense*) were introduced somewhere about 1764. But sixty years ago little or no attempt had been made to improve them; of late years, however, they have made marvellous strides, and flowers are to be seen now a perfect ball in shape, and of the most various colours, although it is a curious fact that only one of the primary colours exists in them, yellow, there being neither a blue nor red *Chrysanthemum*, and all the great variety of tint is due to secondary or supplementary colours. About twenty-five years ago, Mr Fortune introduced the modest little Chusan Daisy, the parent of that numerous and beautiful class known as Pompones. Nothing can be more exquisitely symmetrical than some of these beauteous little flowers; and their freedom of bloom, their hardiness of constitution, and compactness of habit, have placed them, in the estimation of the general public, quite in the forefront of the tribe. They bloom in the little courtyard of the London house, flourish beautifully in pots, and bear any amount of ill-treatment almost that you can inflict on them; while, like every one of Flora's fair children, they will amply repay all the care and loving attention that may be showed them.

When Mr Fortune was last in Japan, he found a class of *Chrysanthemums* entirely different from any he had hitherto seen; some of them curiously deformed, others varied in colour, and nearly all striking enough to induce him to import them. He gave them (about thirty

in number) in charge of a Chinese gardener, but all were lost except seven; these reached England, and were grown and exhibited by Mr Standish of Bagshot, but the great majority of Chrysanthemum-growers repudiated them: they were afraid of spoiling their fine varieties by the intervention of flowers so out of all rule as these were. Others were more adventurous, and a collection was to be seen this season at Mr Salter's of Hammersmith, most interesting for its novelty, and most valuable in its character; and probably one of the most curious facts connected with it was, that although these were the result of hybridising, yet Mr Fortune found amongst them nearly all the original varieties which had been lost through the carelessness of the Chinese gardener. There is one just like the penny spiders, sold by the vendors of street-wares; others like the delicate paper-cuttings which fair fingers are such adepts at making. Others, again, bring to mind by their long clustering filaments some of the sea-anemones; others like long silken tassels, some coloured like Orchids; in fact, there is no end of their variations, while they possess another great advantage—they come into flower after their Chinese brethren are finished, so that they will fill up the gap that exists between the Chrysanthemums in December, and the spring-flowering plants, such as Cinerarias, Hyacinths, &c., in March. There is, doubtless, a large number of readers to whom gardening is a real pleasure; and to no class of men does the horticulture of England stand in greater debt than to the clergy of our National Church. In how many a quiet country parsonage is the love for flowers cherished and their cultivation carried out—diffusing an influence in this direction around them, and encouraging their poor parishioners to trace not only the improvement man has effected and can effect, but the handiwork of an Almighty Creator! We all know Bacon's saying that a garden is the purest of human pleasures; and how many a parson, wearied with that which, though it be the best and highest occupation in which man can be permitted to engage, yet tries the head and often weighs down the spirits, finds in a ramble through his garden the truth of Bacon's further remark, that it is "the greatest refreshment to the spirits of man" to all sent. A few such friendly notes from one who knows how to share these anxieties, and can testify to the benefit it has been to himself, may not be unacceptable; and to all others who love a garden I would bid God speed.

D.

DEAL.



NEW PLANTS OF THE PAST MONTH.

NEW Ferns multiply so rapidly that to describe them would exhaust the space devoted to this paper, so a record of their names only must suffice. Messrs J. Garaway & Co., Bristol, received first-class certificates for two varieties of *Athyrium filix-fœmina*, named respectively *Eucephalum* and *Scopæforme*. The same award to Mrs E. Cole & Son, Manchester, for a splendid form of *Lomaria Gibba*, named *Crispa*; to Mr W. Bull, for *Polystichum cristato-gracile*, and for *Lastrea filix-mascula crispo-cristata*—two fine kinds; to Messrs Ivery & Son, Dorking, for *Polystichum augulare divisilobum Iveryanum*, for *Athyrium filix-fœmina Girdlestoni*, and for *A. filix-fœmina scopæforme*; to E. J. Lowe, Esq. of Nottingham, for *Asplenium adiantum-nigrum*, var. *grandiceps*, and *A. marinum*, var. *imbricatum*, also for nine varieties of *Scolopendrium vulgare*, named respectively *Hermionitis*, *dichotomum*, *formosum*, *omnilacerum*, *Moorei*, *Hookeri*, *areston*, *Fortunei*, and *Claudanum*. A second-class certificate was awarded to Mr W. Bull for *Athyrium filix-fœmina Fissidente-excurrens Lyelli*. It may truly be said that all these new forms of Ferns are worthy of the highest commendation.

Passiflora trifasciata, from M. A. Verschaffelt of Ghent, received a first-class certificate. The leaves are a kind of olive brown, varied with red and blotched with white, and it promises to make a highly ornamental house-climber.

Spiræa palmata, from Mr Charles Noble of Bagshot, is one of the best introductions of the year in the way of hardy perennial plants. It has handsome clusters of bright-rose flowers, and will be invaluable for outdoor decoration. It was awarded a first-class certificate.

Some beautiful *Gloxinias*, having a good deal of novelty of character, have been shown by Messrs Veitch & Sons, both of the erect-flowering and older kinds. Of these the following received first-class certificates: *Gem*, a red-and-white erect-flowering kind; *Voie lactée*; *Mons. Barillet*, violet and white; *Mons. Carcenac*; *Mons. Brongniart*, an erect-flowered variety, closely covered with minute purple spots; *Bergerette*, a soft rose-and-white flower; and *Prince Teck*, rosy lilac and white.

Of Orchids, Mr C. Penny, gardener to H. H. Gibbs, Esq., Regent's Park, received a first-class certificate for a splendid imported variety of *Cattleya Mossiæ* of great beauty, having an exceedingly rich lip and delicately coloured sepals and petals. *Angræcum falcatum*, a very pretty small white species from Messrs Veitch & Son, received a second-class certificate, and the handsome *Dendrobium crystallinum* a first-class certificate.

Two very fine Crotons, also from Messrs Veitch & Son, received first-class certificates—viz., *C. tricolor*, a handsome example, with gold-striped and reddish-green leaves; and *C. aucubafolia*, a vigorous-growing plant, with large blotches of greenish yellow. Mr W. Bull received the same award for *Dracæna australis atropurpurea*, a fine-looking kind, with long slender leaves on a purple stem; and Messrs Veitch & Son for *D. Guilfoylei*, another very handsome kind. The same received a second-class certificate for *D. nigra-rubra*, a good dark-leaved example. Mr Bull also received the same award for *Curculigo recurvata variegata*, for *Strelitzia Nicolai*, for the graceful and handsome *Thrinax graminea*; and a second-class certificate for *Passiflora glauca*, a shining greyish white-leaved kind. The higher award to Messrs Veitch & Son for *Thunia Bensoniæ*, and for *Phormium Cooki*; and a second-class certificate for *Dipladenia Boliviensis*.

Iresine Lendeni, a handsome dark-purplish chocolate-leaved plant from M. Linden, received a second-class certificate; it is a very likely-looking useful bedding plant.

The Show and Fancy Pelargoniums are somewhat numerous this season; and shall be treated of in a separate paper.

Of Variegated Zonal Pelargoniums, first-class certificates have been awarded to Mrs Dunnett from Messrs Carter & Co., a finely-marked high-coloured variety; and to Madlle. Christine Nilsson, another fine variety, from Mr C. Turner of Slough. Prince of Wales, also from Messrs Carter & Co.; and Sir Robert Napier, a very distinct and promising variety, received the same award. The same was given to Messrs Carter & Co. for a very fine gold and bronze Zonal Pelargonium named Josephine, the leaf ground yellow, with a broad lively chestnut zone.

Some curious and interesting hybrid-leaved Pelargoniums, raised by Mr J. Wills, were shown by Mr J. W. Wimsett of Chelsea. They resulted from a cross between the lilac-pink ivy-leaved Pelargonium *Peltatum elegans*, and a good bright-flowering zonal kind. To two of these hybrids first-class certificates were awarded—namely, *Willsii*, the flowers dashed with blue; and *Willsii coccinea*, rosy red. The habits of these new kinds are compact-growing, and have a larger and stouter form of foliage, which is of a stiff character. The leaves of each are slightly zonate.

Nosegay Pelargonium Fire-King, from Mr Turner of Slough, received a first-class certificate. It has large trusses of bright magenta crimson flowers, and has an excellent habit, being compact and short-jointed.

Double-flowering Pelargoniums are clearly in the ascendant, as new kinds are being frequently produced. First-class certificates were awarded to Messrs E. G. Henderson & Son, and W. Paul, for a fine

rosy-pink variety, the flowers being also suffused with violet. It is named *Madame Lemoine*. Other newer forms are *Rose Queen*, very similar to *Gloire de Nancy*; *Pride of Lee*, in the same way, but of a deeper hue; *Andrew Henderson*, with bright scarlet flowers, somewhat deficient in substance; *L'Hermite*, rosy scarlet, a pleasing hue of colour; and *Triumph*, bright orange scarlet. Between some of these there is a strong family likeness, the differences in the hue of colour being very slight indeed.

Some very beautiful forms of Spotted Foxgloves have been produced by Messrs Ivery & Son of Dorking. They are newer to the London district than to Scotland: certain it is they are both handsome and finely marked, and should at once replace the old purple-and-white forms generally found in a mixed flower-garden. R. D.



THE EXPERIENCES OF AN AMATEUR.

(Continued from page 117.)

SINCE my contribution to your March number was written I have been too much engaged to resume my pen, and what I now attempt to write must be both hurried and short. A year or two after my first vinery was built, Rivers's system for putting up orchard and peach houses fell into my hands, and I decided to try my skill in the erection of a cheap peach-house, adhering to the plan laid down by this eminent advocate of glass for the million. I built a house 66 feet long, 12 wide, 8 high at back, and 18 inches at front; it was constructed of home-sawn timber, with shutters at front to act as ventilators; the roof was supported by larch posts back and front; the back was filled up with brushwood: the ends were of deal, with a door in each. I planted it in front with Peach and Nectarine trees, to be trained to a trellis of iron rods and wire—the other parts of the house to be used for trees in pots. I certainly succeeded in my first idea of putting up a house at as low a price as I believe anybody could. But here let me observe that there is a great difference between a cheap and a low-priced house; but my meaning will be better seen when I come to tell its future history. I sadly miscalculated, as many have done—or might I not say did not calculate at all?—the difference of climate between Sawbridgeworth and Northumberland. I bestowed the best care possible upon the trees, but I could not coax them to fruit; and after two years of trial I found it necessary to remove the brushwood back and to close it up with deals, putting in shutters for top ventilators: this made a decided change for the better, and I soon began to see

signs of reward in the shape of fruit. I refer particularly to the permanently planted trees, as those in pots did very little good. After having a crop or two, the trees four years ago had red-spider very bad. In the September of that year I tried syringing with cold water and fumigations of tobacco, and lastly of sulphur: the latter being applied too strong the foliage was destroyed, and the following year I had no fruit. Since then I have had two fair crops, and a small one now hanging. Last year, however, I could not ripen the crop for want of sun and heat; and as the house is still without any artificial heating power, I am dependent upon the season for bringing its present promise to maturity. The trees never looked in such vigour as now. A change just made in the construction of the border has contributed mainly, if not altogether, to this result. The pathway is about 2 feet below the level of the border: up to the time the change I am now about to describe was made, the border sloped from within 3 feet of the front to about 6 inches of the level of the pathway. This made it difficult to water, besides keeping the house untidy by the particles of earth falling on to the pathway. In the spring of the year, however, I got a load or two of turf and built a wall to the full level of the border and filled in the slope with fresh soil; after this was completed I gave the whole border a thorough watering, and the difference thus made upon the appearance of the trees is astonishing, and amply repays all the trouble; they have escaped red-spider, and the fruit is smelling as well as could be wished. That Peaches can be grown and well ripened under glass, without artificial heat, in this county, is, I believe, perfectly clear, but whether as a commercial speculation it could be made remunerative, is, I think, doubtful. The improvement made in the construction of the border will enable me easily to grow vegetables, besides affording ample storage for plants.


Before leaving this house, however, allow me to express my opinion as to the economy of such cheap houses in general, and in doing so I would desire specially to keep in view that class to which I belong myself—the ardent working amateur.

That many have been misled by the unguarded recommendations of eminent pomologists such as Mr Rivers, there can be no doubt, and the effect of such is to hinder rather than promote the cultivation of fruit under glass. If it is put forth to meet the general and inordinate desire for cheapness, such a course cannot be justified, because the public have a right to expect that when any given system is promulgated by such men as I have referred to, their exceptions should be fairly and explicitly stated. What I mean is, that if fruit-culture in such houses can be successfully prosecuted in the southern counties of

England, readers of such works as are published with the view of promoting such cultivation ought to be cautioned not to expect the same results where the conditions of climate are altogether different. These remarks refer to houses after the mode of which my own was built, and which until altered produced nothing but failure and disappointment; but I by no means advocate highly-finished and ornamental structures as *necessary*. I have both home and foreign timber houses inexpensively built, but the preference must undoubtedly be given to the latter, from this fact, that when once made and properly finished they are permanent structures, while in the other case the hammer and chisel are in continual demand; besides, it must be borne in mind that home timber requires to be so much heavier than foreign that a great amount of sunlight is excluded, to the detriment and loss of the plants beneath.

In a future article I intend to give a description of a house I erected as a Lady-Downes house. I will give its cost; and I shall be much mistaken if it does not turn out to be quite as cheap as any home-timber house of the same size and character.

D. P. B.



THE PALM.

MANY species of this genus are the best possible for indoor decoration, and in a small state particularly so. No plants are more easily grown and none are more tenacious of life than the Palm, enduring alike dust and elbowing inseparable from a housemaid's train, and cold and heat from open windows and gas-heated air. Who will not say that a small Palm of any species, with the top of the pot covered with *Lycopodium denticulatum*, is anything but an ugly object in a lady's boudoir, or anywhere else where our plant is grown for this purpose in Britain? A thousand are grown on the Continent, and why? because foreigners appreciate their beauty and gracefulness, and a great demand is at once raised. Nurserymen alive to their own interest build houses expressly for their culture, import seed and raise them by the thousand, and in three years they are sold to the plant-loving community of Paris for 5, 20, or 30 francs each, as the case may be. Belgium supplies large quantities, and even sends them to the Paris market. Such species as *Corypha australis*, *Oreodoxa sanchona*, *Latania Borbonica*, *Areca rubra*, and many others, are sold to those wishing to grow on their own plants, in a small state, from 8 to 20 francs the dozen. Who, then, would be without a Palm in their houses when they can be got so cheaply?

We have all been in the habit of looking to the Botanic Garden at home for a sight of a Palm, but nowadays our enterprising nursery-men are bringing them within the reach of everybody, and in some private gardens they may be counted by the dozen, and still the wish is for more. What looks neater than a few dwarf Palms dotted through a vinery or Peach-house? They give at once a furnished and elegant appearance to the houses; and they get at the same time ample room to develop their handsome persistent leaves. No more attention is paid them than three or four waterings a-week with *warm* water and a slight addition of soil in a larger pot every other year. This, with a sponging once a-month with rain water, maintains them in health and vigour, in a small state, for a number of years. Sandy peaty soil is the best for Palms, lightened and enriched with very old leaf-soil, and all warm and dry previous to use. A loamy cold soil, and applied in large quantities, is a sure way of having weak yellowish leaves, instead of dark-green leathery ones.

A common practice with many on receiving a Palm from the nursery is to pot it immediately in a larger pot, and to give it altogether a different soil to what it has been accustomed to, before even studying its proper wants, or the time of year it came to hand. May is the best month to apply additional food to Palms; and July and August the best months to get them from any distance.

The French and Belgium gardeners adopt the following mode of culture. The houses are low, flat-roofed lean-tos, 12 feet wide or so. The first 3 feet from front forms a table, the next 3 feet the pathway, and then a bed of tan or leaves, 6 feet wide, wherein are plunged the young Palms. From the moment the young seedlings are transferred from the seed-pan to a 3-inch pot they are kept plunged in a tan bed, in order not so much to supply them with heat, as to keep the soil moist and healthy without water till the roots are in activity. Moistening the leaves with warm water twice a-day is sufficient for them for months. While in a young state they require more heat than when older. Sorts such as those already indicated, with *Seaforthia elegans* and *robusta*, *Phoenix dactylifera* and *reclinata*, *Caryota Cumingii* and *excelsa*, several *Chamærops*, *Thrinax parviflora*, *Zalacca Wagnerii*, *Cocos coronata*, *Caryota sobolifera*, and many others, will thrive and look robust in any house kept a little close and moist. Although in French nurseries they are accommodated with tan beds, it is not absolutely necessary when they are four or five years old, and the pots well filled with roots. The front 3-feet shelf is generally filled with *Dracænas* and *Pandanus*, and, *tout ensemble*, the house has a very fine appearance.

H. K.

HINTS FOR AMATEURS.—AUGUST.

THE principal work in gardens at this period of the year is hoeing between crops, clearing off weeds and decaying leaves from vegetables as soon as they appear. The very busy time being over, order everywhere should now prevail. Most operations are the same as last month. Cabbage for early use should now be sown. If the ground is very dry, the drills should be well watered before the seeds are sown; and it may be necessary to give the whole space a good watering after the seeds begin to vegetate. Cauliflower, to be kept over winter under protection, may also be sown from the second to the last week of the month, according to earliness or lateness of the locality. Broccoli may be planted in southern parts, but it would come to little if planted where the autumn is short and cold. Greens of every kind may be planted as soon as other crops—such as Potatoes, Turnips, and Peas—are cleared off. Celery requires abundance of moisture if crispness is desirable. A moderate earthing after watering will keep in the moisture. Dustings of lime may be necessary where slugs are troublesome. The stems must be kept close together to keep the earth out of the hearts of the plants; a piece of matting, by some, is tied loosely round the stems, which for a time keeps them together, and decays soon after earthing up. Leeks in ridges may be earthed up, first giving a good soaking of manure water; and if manure is given in process of earthing it will greatly help the crop. Leeks are gross feeders, and require liberal treatment when they are wanted fine. If Onions are growing too rank, and likely to be coarse, they may be twisted and bent at the necks to stop growth and hasten ripening. Lettuce and all other Salads, if required, may be sown and planted as formerly directed. Cool ground, rather shady if possible, is required to insure success. Strap-leaved and White-stone Turnips may be sown after rain, or after a good watering to the ground; if started well into growth now, they will be useful in winter. Parsley should now be carefully thinned, and all coarse plants taken out; they will thus have a much better chance of standing a severe winter. If Peas are coming in too quickly, a succession may be kept up by topping in the haulm, watering and mulching at their roots; but this is not likely to be successful if they have been allowed to bear freely and the haulm is turning yellow. If seeds are ripening, they will require careful looking after; birds will be troublesome. If the quantity is not large—which should not be in ordinary gardens, where economy is kept in view—the seeds may be cut with pieces of their stalks and laid thinly into flat baskets lined with paper; they can thus be easily taken out and in, as they require plenty of sun, and must be kept dry in an open shed till they

can be rubbed out (work suitable for wet weather) and stored away in paper bags in dry quarters. Cucumbers which have borne freely can be cut back, all dead and dying leaves cleared out, shaded from strong sun, sprinkled with water early in afternoons, and shut up, keeping the linings well made up. They will soon start into growth, and bear as freely as ever. A good surfacing of decayed manure and turfy loam spread over the surface of the beds, and tepid water given, will be of great service when the soil has become exhausted. Vegetable Marrows can be similarly assisted. They require plenty of room to grow, and to be kept from matting together. This is now a good time to begin Mushroom-growing. A quantity of horse-droppings, with a little of the straw among them and a little loam, should be well mixed together and dried moderately, but not allowed to lie exposed to all weathers, which would take all the virtue out of the dung. The heap may be turned once or twice, but not allowed to get very hot; then spread the mass on a floor or other space, beating the whole firmly as it is placed. When finished, the mass should be firm and about a foot thick (much less sometimes does well). The heat, if the material has been well managed, will soon rise; but if it is likely to be very strong, holes all over the bed should be made for its escape; and when it falls to, say, "milk warm," the spawn may be placed. First break it up in pieces like walnuts or small eggs, and insert it in the bed about 2 inches deep and 9 to 12 inches apart, beating the whole smooth and firm; and in the course of ten or twelve days the earth may be put on 2 inches deep all over the surface and well beaten smooth with a spade. Sticks may remain in the bed, as the heat might rise too high, and holes would again require to be made to allow the heat to escape. Mushrooms generally fail when allowed to be cold and wet, or very dry and too hot; judicious watering generally can counteract the latter evil. Watering is seldom necessary till the young Mushrooms are appearing, which is generally in the course of five to eight weeks after spawning. Regular sprinklings may then be given. A temperature of from 55° to 60° is high enough. The atmosphere of a cellar is generally very suitable for Mushroom-culture; some mention the use of sheds, frames, and stables. All do well enough if enough of heat is afforded by coverings, &c. Ridges out of doors do well when well covered, but the work is very great. However, it pays market-gardeners well to use ridges and litter; but a mushroom-house can produce more valuable supplies of different kinds of vegetables than any other structure in a garden.

Netting and other attention to fruit must be given. Wasps will be very troublesome, and no pains must be spared to destroy them and keep them in check. Many fruits—such as Peaches and Plums

—can be gathered before they are soft, and will ripen in a warm airy place. Though fruit is better to have as much good from the tree as possible, it may be a necessary evil to gather it before quite ripe, when wasps and flies cannot be kept in check. Trees should now be kept free from growth, so that ripening of wood and spurs may be hastened. Trees not bearing, and making strong watery wood, may be helped into a bearing state by attention to the roots now. A quantity of soil may be dug away from each side of the tree, lifting up the roots carefully, cutting through underneath the trunk, taking off strong tap-roots well back with the knife, a quantity of lime-rubbish well rammed below the roots, and over it a layer of clean soil; then spread all the fibres, if any, over the clean soil, and tread in 6 or 8 inches of earth firmly. If the weather should be dry, a good watering may be necessary. This is what may be called "half-lifting," as enough of roots will be left undisturbed to keep the tree in health; but useless growth will be materially checked, and the result may be a tree well studded with fruit-bearing buds by the end of the season. The other half of the roots could be lifted in November, and a season would thus be saved, as when a tree, if a large one, is wholly lifted at once, it seldom is of much use within two seasons; but overdoing the thing at this season would do more harm than good. No suckers from the roots should appear; they should be taken clean off the roots with a sharp knife. Currants and Gooseberries are often kept late by covering them with folds of gauze or mats. Strawberries will now require careful attention with water, and the runners kept off to enable the plants to become established while the growing season remains. Where fruiting is finished, the plants require to be thoroughly cleared of all litter, and allowed to stand clear of each other, and the surface of the soil should be well cleaned and stirred with the hoe. Some still use the spade, which too often cuts off all surface roots, doing more harm than good. There can be no objection to forking a quantity of decayed manure into the surface as long as the roots are not injured.

Roses budded in June and July should now be examined, and their ties taken carefully off. If the buds have not taken, budding again may still be performed. Keep all suckers off the roots, and cut off all shoots from the stock, so that the strength may be wholly thrown into the bud. Carnations, &c., not already layered, should be done at once. Auriculas keep growing steadily; and those not already shifted, and their pots full of roots, should have fresh soil and clean pots. When the plants are healthy and the roots not to the sides of the pots, it is better to allow the plants to remain as they are. Anemone and Ranunculus seed may be sown now, either in boxes of healthy soil or in borders, where there is not room to winter such plants under protec-

tion. Dahlias will now require regular attention, preventing the shoots from becoming matted, and exposing the best flowers. If seed is to be saved, the finest blooms should be marked; but if a fine display is required, every bloom should be picked off as soon as it is past its best. Pansies propagate by cuttings: seedlings may be planted out; seed may also be sown. Pinks which are rooted may be planted out into permanent beds; good loam and decayed manure suit them well to grow in. All kinds of flowering plants in the borders and in beds may be propagated now without delay; a frame placed on coal-ashes will answer well for most things. Ordinary Geraniums do well in the sun, more tender kinds require to be protected from wet; but in damp structures they would be worse than out of doors. All flowering plants in glass structures require to be kept thoroughly clean and orderly to give them interest, now that there are so many flowers outside. It is perhaps (where means are limited) better to keep Geraniums, &c., growing and free from flowers at this time, so that they can be strong and in condition to flower freely after outdoor things are done with. Cinerarias, Primulas, and Calceolarias will require to be frequently looked after to keep them free from insects. Shift them on as their roots appear at sides of the pots. If nights become cold, give water in the morning.

M. T.



RAMBLES IN THE ROSE GARDENS.

FROM NOTTINGHAM GUARDIAN.

AN evening at Cauntun, or an evening anywhere, with the genial and kind-hearted, would be a rich treat, but an evening in the Rose garden surrounded by thousands of the queen of flowers enveloped in an atmosphere of the roseate balmyness, and in the company of true lovers of gardening, is a bright spot on the tablet of memory, not to be effaced until the great leveller of all things, Time, effaces it. Such a treat we had a few days back when the Rev. S. Reynolds Hole kindly invited a few neighbouring gardeners to visit his Rose garden. Cauntun has long been noted for the superiority of Roses and the devotion of its proprietor to their cultivation. The success which has attended Mr. Hole's labour in the Rose garden has been of a most satisfactory kind, inasmuch as he has not only now a very large number of prizes, but he has also by his eloquent advocacy of the claims of the queen of flowers caused it to be cultivated by hundreds who, not thus incited, might have looked upon it as a Rose and nothing more. Now the demand for it is so enormous and so great, that notwithstanding the number of nurserymen who devote almost exclusive attention to it, it is a difficult matter to obtain the more modern kinds, unless you order them many months before they are required for planting. The Roses at Cauntun at the time of our visit were superb. Upon the deep unctuous loam, liberally mulched with manure from the farmyard, the dry weather had had little or no injurious effect, unless it was to moderate the growth of the more robust varieties, and concentrate the

force of the plant in the flowers. These generally were large, full, strong, and with a substance of petal rarely equalled; indeed, for the number of plants we do not know that we ever saw so many fine flowers with so few bad ones. Some of the flowers were enormous, being little less than 6 inches in diameter, and stout in proportion. As an exhibitor Mr Hole has certainly been one of the most successful in England. He originated ten years ago—that is, in 1858—the National Rose Show; and the first Exhibition in England of Roses exclusively was held in the Hanover Square Rooms in that year. Mr H. superintended the third National Rose Show at the Crystal Palace in 1860, and it is to him we are indebted for the recent introductions at those Exhibitions which have now become so popular. As an exhibitor Mr Hole has won more first prizes than any amateur Rose-grower in the country, among them being thirty silver cups open to all England. As a recognition of his services in promoting the cultivation of this beautiful flower, a very handsome tea-urn was presented to him “by the Rose-growers of England, amateur and professional, at a dinner given to him in London, June 1866.” The collection of Roses at Cauntun amounts to about 3000 plants, principally budded upon the briar. Some are grown in the Rose garden, but a large number is also grown in other situations, so as to command a long succession of flowers. Below we give the names of some of the most remarkable kinds :—

BEST VARIETIES.—(Old Favourites.)

- | | |
|---|--|
| Anna de Diesbach, 13 inches in circumference. | La Ville de St Denis, still one of the best for the garden and the show; a robust grower and the flowers well formed. |
| Auguste Mie, very delicate pink, and of good form. | Louise Peyronny, of delicate constitution, but a lovely flower. |
| Caroline de Sansal, always reliable, free flowering. | Madame Boll, a grand lady, large, handsome, and healthful as the Princess Mary of Teck. |
| Charles Lefebvre, still, in his best phase, the most glorious of crimson roses, but soon succumbs to heat. | Madame Boutin, a noble Rose, always good, and “beautiful for ever.” |
| Comte de Nanteuil, very large and full—a grand show Rose. | Madame Caillat, good shape and constant. |
| Comtesse de Chabillant, as perfect in shape as any Rose grown. | Madame C. Wood, immense, and, when not too much expanded, a good show Rose. |
| Duc de Rohan, a glorious flower, both as to symmetry and brilliancy of colour. | Madame Clemence Joigneaux, one of the most perfect, very large and well-shaped, of the few which, like Phyllis, “never fail to please,” whatever rain may fall or droughts may burn. |
| Duchesse D'Orleans, a beautiful Blush Rose, very large. | Madame Furtado, of weakly constitution, but of great excellence; very circular, full of petal, and enduring the heat of sun and show-room admirably. |
| François Lacharme, variable, but at its best most charming, globular in shape, superb. | Madame Hector Jacquin, of perfect form, the inner petals folding over each other—a robust frame and excellent garden Rose. |
| General Jacqueminot, still one of the best—good in all seasons. | |
| Gloire de Santenay, uncertain, but sometimes first-rate. | |
| John Hopper, a Rose of which England may be proud, being the first seedling of real excellence undoubtedly raised upon English ground, i.e., by Mr Wood of Ipswich. | |

Madame Vidot, pale pink, a most lovely

Rose of beautiful form and foliage, but very susceptible of adverse weather.

Marechal Vaillant, should be in every collection of a dozen Roses; always good, ample in bloom, and excellent in quality.

Prince Camille de Rohan, generally

loose in petal, but of glorious velvety crimson complexion.

Senateur Vaisse, always to be depended on, quite first-rate.

Souvenir de Comte Cavour, constant, of excellent form.

Victor Verdier, deep rose, very large, a grand flower.

Of the SUMMER VARIETIES—i.e., Roses which bloom but once—the best grown at Caunton Manor are Blaini 2, a most beautiful blush Rose with white outer petals, perhaps the most becoming of all Roses for the hair in combination with that most appropriate of ferns the *Adiantum capillus veneris*.

Charles Lawson, a grand Hybrid Bourbon Rose of great size. A tree against the house at Caunton had more than 100 blooms upon it.

Coupe d'Hébé, uniformly beautiful, uninjured by climate, one of the few old favourites which do not seem likely to succumb to progress and development.

The Persian Yellow should be in all collections for its rich golden colour, a most striking contrast among other

Roses, unhappily small and short-lived.

Triomphe de Bayeux, a hybrid choice Rose, which, if pruned sparingly, produces a profusion of beautiful white buds, very like a Tea-rose in appearance, and most valuable for bouquets and vases.

Madame Leutri, most desirable, though not sufficiently perfect for exhibition.

Of Mosses, the Common and White Ball are the best.

TEA-ROSES are grown under a framework, constructed against a wall for the purpose, on which a covering may be placed when necessary. The best are Adam, Comte de Paris, Devoniensis, Madame Bravy, Madame Falcot, Madame Villermoz, President, Rubens, and Souvenir d'un Ami. They are also grown extensively in pots and in the open air, together with Noisette roses, Celine Forestier, Gloire de Dijon, Marechal Niel, Narcisse, Solfaterre, and Triomphe de Rennes. Many of these varieties do not require protection, and we saw beautiful blooms of most of them, including Devoniensis, Madame Bravy, Madame Villermoz, Marechal Niel, Celine Forestier, Souvenir d'un Ami, and Triomphe de Rennes, on view in the open ground. Speaking of Tea-roses, we must specially mention a plant of Climbing Devoniensis growing to the top of a wall 15 feet in height, and flowering abundantly. There is also probably the largest specimen of Gloire de Dijon extant against the chancel of the church here, and which has had 150 flowers blooming simultaneously upon it.

Of NEW FAVOURITES we noticed, but have not space for special descriptions, only to say that all mentioned are of excellent quality.—Abel Grand, Alfred Colomb, Antoine Ducher, Centifolia rosea, Charles Rouillard, Duchesse de Caylus, Exposition de Brie, Fisher Holmes, Horace Vernet, Josephine Beauharnais, Madame Fillion, Mdle. Marie Rady, Madame Pulliat, Marguerite Dombrein, Mdle. Therese Levet, Marguerite de St Arnaud, Marie Baumann, Monsieur Noman, Thorin, and Xavier Olibo.

Among the new Tea-roses, Bouton d'Or (the most perfect little gem for the Button-hole), Madame Furtado, and Madame Margottin, are valuable additions. Miss Ingram was not in bloom, only showing remarkably clear and vigorous growth. Mr Hole had seen several trees at Slough, covered with large and beautiful flowers, on the 5th of June, and there can be no doubt of its excellence. Mr Turner has other seedlings of very great promise, two of them, named

"Caroline Hole" and "Sir Robert Napier," of special merit. Duke of Edinburgh, raised by Messrs Paul and Co., of Cheshunt, a grand kind. A box of it at Leeds universally admired.

So far we have confined our remarks exclusively to Roses. We may now say, noted as he is in that peculiar line of floriculture, Mr Hole is not a man of one idea, but has an eye for the beautiful in every phase of nature. Thus he is great in "bedding out," grows a selection of the most telling plants, and groups them with that rare taste which characterises the plant-lover and the man of education. The flower-garden at Cauntun is as good and gay as any we have seen a degree farther south, and with a little rain and cooler atmosphere it will, a few weeks hence, be quite a study. The pleasure-grounds are not extensive, but Mr Hole contemplates an addition which will make them very complete. In the glass-houses we noticed a nice crop of Grapes, and Strawberries and Pears in the open garden were also good. A small collection of the more rare and beautiful stove and greenhouse plants has also been commenced, and the plants are doing well. Among them we noticed the more rare *Alcacias*, *Marantas*, and *Caladiums*. *Coleus Telfordii* was showing its golden leaves, and we also noticed some nice plants of *Panicum variegatum*, a plant which promises to be useful for bedding purposes. *Rogiera gratissima* filled the house with its delicious odour, young plants of *Ixoras* were starting into free growth, and the same may be said of *Dipladenia amabile*. In another house a small collection of the choice *Heaths* was starting into free growth. Mr Hole is rich in the more modern bedding *Pelargoniums*, and he has also some very good varieties of the fancy and show kinds. We must not omit to notice, in this house, a very handsome specimen of *Echeveria metallica*, some 2 feet high and quite as much in diameter, the leaves being particularly broad and handsome. Altogether Cauntun is a very interesting place, and we doubt not will annually become more so.

[We have copied this notice of Cauntun, the residence of the prince of Rose-growers, from the 'Nottingham Guardian,' that our readers may ascertain what are the gems of so celebrated a collection. It is from the pen of our old friend the able horticultural editor of that Journal, and we are sure he has noted only such as may with advantage be added to any collection.]



NOTES BY THE EDITOR.

On the morning of St Swithin's day we took rail at Eakbank for Leicester, and after a ride of 300 miles in a cloud of hot dust, we arrived at the end of our journey. Leicester was all agog, for the Royal Agricultural and Royal Horticultural Societies of England were to hold their meetings there on the morrow. The streets were crowded with people from all parts of England, the public buildings illuminated, and flags were flying in all the principal streets. The town itself is one of the cleanest and best regulated we ever entered; and we cannot help remarking that, though it contains 90,000 inhabitants, and carries on many branches of industry requiring steam-power, there is less smoke to be seen in or around it than in many villages we could point to, simply because the corporation of the town rigidly enforces the law which compels every one using steam-power or furnaces for any purpose to consume their smoke, consequently all the houses look as if recently built, the people have not that begrimed ap-

pearance which they have in the towns of "the black country," and everything looks fresh and clean.

On the morning of the 16th we made our way to the race-course, passing under two very magnificent triumphal arches on the road to the ground where, under the most brilliant auspices, was being held the second provincial gathering of the Royal Horticultural Society. The visitors entered from the London road direct to the great circular tent through a long avenue of Coniferae, in pots and tubs, furnished by Messrs Barron & Son of Elveston, near Derby. This collection of ornamental trees and shrubs was an exhibition of itself well worthy of study. As a sort of entrance to this avenue were built up, under the directions of Mr Ingram, gardener, Belvoir Castle, four towers, representing the geological formation of the county of Leicestershire, the various minerals being placed in the order in which they occur in the formations. Mr Ingram is well known to be an able geologist, and on the occasion referred to his labours afforded a treat to all interested in such matters.

The great circular tent is an object of considerable interest, as much as in it are staged the two great collections of twenty plants, ten foliaged and ten flowering, arranged in the best and most effective way, competing for the great prize of £25, given by the Royal Horticultural Society as a special prize. Mr Baines, gardener to H. L. Nicholds, Esq., Bowden, near Manchester, is the fortunate winner of this prize, having failed to take it last year at Bury St Edmunds. On this occasion he defeated Mr B. S. Williams, Victoria Nurseries, Holloway, London, though only narrowly. The plants are not so fine as those which competed last year at Bury, though in themselves quite enough to constitute a small exhibition.

Mr Baines has fine plants of *Dasyliion acrostichum*, *Sarracenia purpurea*, *Gleichenia flabellata*, *Verschaffeltii splendida*, *Erica tricolor*, *Holfordii*, and *Sarracenia flava*, among his lot. Mr Williams has a capital specimen of *Caladium Lowii*, also *Dion edule*, and *Dasyliion plumosum*. Two magnificent lots of miscellaneous plants, also furnished by Messrs Baines and Williams, form a fine feature in this tent. Four noble specimens of Tree Ferns also adorn this splendid tent, Mr B. S. Williams taking the first prize with the two finest specimens, beating Mr J. M'Lean, the Gardens, Beaumanor Park, who also stages two grand specimens. All represent one kind—viz., *Dicksonia antarctica*. Round this tent are arranged the collection of Ferns, competing in some of the classes; some of the stove and greenhouse and ornamental-foliaged plants; and the interesting displays of ornamental-foliaged bedding-plants furnished by Messrs W. Cunningham, Forge Nursery, Burton-on-Trent; and Mr T. Charlesworth, West Bridge, Leicester. Both collections are of considerable merit, but the varied and high character, as well as the excellent condition of the group furnished by Mr Cunningham, carried the day.

As the visitor wends his way from the entrance to the circular tent, two long tents are noticed on the right and on the left running in a longitudinal direction with the avenue formed by Mr Barron's trees. The one on the right has many objects of interest, containing, as it does, the collections of fruit and vegetables competing for the valuable silver cup offered by the proprietors of the 'Gardeners' Chronicle.' Nine competitors struggled for this fine trophy, and a very close competition resulted in the case of the collections furnished by Mr J. M'Lean, the Gardens, Beaumanor Park, Loughborough, the residence of W. P. Herrick, Esq.; Mr Sage, the Gardens, Gopsall Hall, Atherstone; Mr Bailey, the Gardens, Shardaloe, Amersham; Mr C. Frisby, the Gardens, Blankeney Hall, Sleaford; and Messrs J. Sowden & Sons, nurserymen, of York. The prize was

ultimately won by Mr M'Lean, a Leicestershire gardener, and it is a matter of great interest to the county of Leicester that one of its gardeners should have taken this valuable prize. The handsome silver cup (a copy of the famous Cellini cup) was placed amid the fine collection furnished by Mr M'Lean, who received the warmest congratulations from many of his friends on his success after so keen a competition. So closely did some of the competing collections approach each other in general merit, that the afternoon was somewhat advanced ere the decision of the judges was finally made known. Here also are to be found the collections of fruit, representing the two best desserts, consisting of not less than seven kinds of fruits of 1868, arranged as for the table. Two competitors only entered in this class, and the successful grower was Mr W. Carmichael, gardener to H.R.H. the Prince of Wales, Sandringham, King's Lynn, who also won the same prize at the Bury St Edmunds Show last year. In this tent were the whole of the collections of the fruit competing in the several classes, many of which are of a valuable order, and competent judges do not hesitate to avow their opinion, that on the whole the show of fruit is of a very high order, regard being had to the season. For the special prize offered by the Right Hon. Earl Howe, for the best five dishes of distinct kinds of Grapes, there are four competitors, and the same number for the Countess of Howe's special prize for Peaches and Nectarines. Vegetables also find a lodgment here, and the cut flowers, the latter filling the two side tables in this tent. A most conspicuous feature is a grand collection of cut Hollyhocks, both on spikes and single blooms, furnished by Mr W. Chater, nurseryman, Saffron Walden. Some of these are very beautiful, and are well worthy the high character Mr Chater sustains as a cultivator of the Hollyhock.

The cut Roses form a prime feature also in this tent, and in spite of the hot dry weather, some unaccountably good flowers were shown. The intense heat of the tents is telling severely on the flowers, as might be expected, but notwithstanding they are fine in colour and richly fragrant. The stands of cut Zonal Pelargoniums, of Verbenas, Carnations, and Picotees (of which there are a great number furnished, many more than could have been expected), and other cut flowers make a good show here, and form a point of considerable interest. In the tent corresponding with this, is a grand collection of new and rare plants, furnished by Messrs Veitch & Son, of London, many of them of rare excellence; also other groups of plants, both flowering and foliaged; Petunias in pots, &c. &c., and some collections of ornamental-foliaged bedding-plants in competition for the special prize offered for them.

The Orchids are a fine feature also, especially a collection of twelve kinds, furnished by A. Turner, Esq., Bow Bridge, quite in keeping with the splendid character for which Mr Turner's plants are so famous. Among them is a plant of *Saccolabium guttatum giganteum*, of extra fine quality, on which can be counted no less than twelve spikes of bloom.

Two long tents branch out in a right and left direction from the great circular tent. The one to the right is extremely gay with colour, as it contains those showy specimen Zonal Pelargoniums, that are always so effective at exhibitions, and which are shown here remarkably well. Some of the specimens could hold their own against the best plants competing at all large London exhibitions. Fuchsias also are a special feature in this tent. Some of the plants are well-grown and flowered. Other Pelargoniums of the large flowering and fancy class also are arranged here, but, owing to the lateness of the season, are past their best. The handsome variegated Pelargoniums are in close company, quite striking in their fanciful garb of red, bronze, and gold. Messrs F. & A. Smith, of Dulwich, London, show extensively; among their plants are many of the newest and most valu-

able kinds. The long tent filling a corresponding position on the left of the circular tent contains a rich and varied collection of stove and greenhouse and ornamental-foliaged plants. Of the last named, the grand *Alocassias* and *Caladiums* from Lord Belper's are wonderfully fine examples, and do the cultivator infinite credit. The magnificence of some of the leaves can only be appreciated by those who may be privileged to look upon them. The orchard-house trees that are also here are extremely good, especially a collection from William Brookes, Esq., of Croft House, Hinckley, that are not only well-grown, but loaded with good crops of fruit.

Of fruit there was a very considerable exhibition, but, with the exception of the Black Hamburg Grapes, which were of fine quality, and some excellent Pines from Mr Rawbone, gardener, Woodseat, Derbyshire, and Mr Henderson, gardener, Thoresby Park, who showed a large number of the Thoresby Park Queen Pine, there was little worthy of special remark. A seedling Black Grape resembling the Black Prince in berry and in colour, the bunches about 1½ lb. weight, was shown by Mr Cox, gardener, Madersfield Court, and named "Madersfield Court Black Muscat Grape." It is represented as being a cross between the Black Alicant and Muscat of Alexandria. It partakes of the colour of the one and the flavour of the other. If it can be grown in a moderate temperature, our opinion is that it will prove a valuable late-keeping Black Grape, which, in conjunction with Mrs Pince's Muscat, should drive Lady Downes and Black Alicant out of cultivation. We ourselves exhibited two bunches of the "Golden Champion" Seedling Grape; and we prefer quoting what Mr Ayres, the able Horticultural editor of the 'Nottingham Guardian' said of it to offering any remarks of our own. We give his remarks about the fruit generally:—

"As an exhibition of good fruit there was much to admire; as one exemplifying the great strength of a great gardening country there were few things that claimed special attention. One great exception must be made, and that was Mr William Thomson's Golden Champion Grape. This was certainly the gem of the exhibition, and in every respect worthy of all that has been said of it. Large in size, large as a Greengage Plum when well grown, and not less rich in flavour, robust in constitution, and free-bearing as a Black Hamburg, this is certainly, therefore, the best Grape, always excepting the Muscat of Alexandria, the world—so far as we know of it—has ever seen. We would not speak thus exultingly if we had not tasted it. We look upon this Grape as decidedly the finest variety, as a White Grape, we have ever seen, and destined to take its place side by side with the Black Hamburg, and not lose by its position."



CHRYSOBACTRON.

I was glad to see your contributor on "Hardy Herbaceous Plants" calling the attention of your readers in last issue to "*Chrysobactron Hookerii*." If your correspondent ever saw it in cultivation it must have been under very unfavourable circumstances; it has grown in my garden for many years, and during the whole of last month it was in magnificent bloom; one stool, the largest I have, sent up twenty-five spikes, varying from 2 to more than 3 feet high. Its bright yellow flowers in such masses are exceedingly effective, and it has the great advantage of being easy of cultivation, the only thing necessary to insure vigorous growth is to plant in good rich garden soil, and deluge with water every after-

noon during dry weather. It is a semi-aquatic, and I can only account for the stunted appearance it presents in some gardens to ignorance of the natural wants of the plant; it is perfectly hardy and easy of propagation. Every spring I dig down hundreds of young plants sprung from self-sown seeds of the summer preceding.

To all lovers of herbaceous plants—and they are legion—I would say get *Chrysobactron Hookerii*, treat it as above described, and it will not fail to give satisfaction as a competition flower; in its earlier stages, if well grown, it could hardly be beat.

So many writers in the garden periodicals puff up trash, leading many to disappointment, that it is quite refreshing to find your contributor, "W. S.," so much underrating this beautiful flower.

AMATEUR.



A FEW WORDS ON MR RIVERS'S NEW PEACHES.

(From the Journal of Horticulture.)

LIVING in a cold district as I do, my experience with regard to Mr Rivers's new early Peaches is of some importance to the public.

This season Early Rivers was dead ripe on the 4th of June, and had I been at home, it would have been gathered two or three days before. Early Louise and Early Beatrice followed so closely that all three were ripe in the first week in June. Early Beatrice would no doubt have been ripe first, had not the tree occupied a position close to the ventilators, which were always open from the beginning of May; the other two were side by side, 3 or 4 feet farther from the front of the house. These trees and a Dr Hogg grafted on the *Prunus padus* are at the cool end of the compartment of a house heated by two 4-inch pipes above the surface, and by two under a slate-bottomed bed. No attempt has been made to force early, a large amount of air being always admitted; and the condition of the other trees proves that these new early Peaches are at least what Mr Rivers professes them to be. Grosse Mignonne at the warm end of the same compartment is just beginning to colour, as is also the Dr Hogg referred to; and these will be ripe, I should think, in about ten days' time.

This Dr Hogg was grafted in March 1867, and is now a sturdy pyramid 6 feet high, with the lower branches 2 feet long, and I have left it one dozen Peaches to mature; the tree from which the scion was taken is at the warm end, and the fruit has not yet begun to swell since stoning. I mention this, as it must be due to the stock that it has become an early Peach. It flowered and set its fruit several days before any other tree in the house; but it was overtaken during the stoning by the Early Rivers, Early Louise, and Early Beatrice. I may add that the flavour of these three early Peaches was first-rate, Early Rivers retaining most decidedly the White Nectarine bouquet.—W. KINGSLEY, *South Kilvington, Thirsk.*



GLASGOW FLOWER-SHOW.

THE July, or what may be called the Rose Show of the Glasgow and West of Scotland Horticultural Society, was held in the City Hall and adjoining buildings on the 8th of July. The show, as a whole, had a much more pleasing and picturesque appearance than the June one held in the same place. There were fewer plants in a blaze of bloom, as the Azaleas were in June, but this lack was much more than compensated for by the graceful forms of Tree Ferns, Palms, and other such plants. We were very pleased to observe that the Glasgow Botanic Garden put in an appearance by supplying a table of plants remarkable for their foliage, if not for their flowers; and we hope this is but an earnest of what Mr Bullen, the new curator of the gardens, is likely to do for the Glasgow flower-shows. Stove and greenhouse plants were well represented for the late period of the year. Stage Geraniums were exceedingly poor, and they ought to have been a strong feature of the show. Mr Campbell's Variegated Geraniums, of the light-coloured foliage kinds, including a large number of his own seedling, Castle Milk, and trained for the most part as pyramids, formed one of the prettiest features of the exhibition; they filled a table under one of the galleries 50 feet long by 4 feet wide, and were the theme of general admiration. Roses were, however, the strong feature of the show, and we must say that the excellence of their quality surprised us, seeing that the season has been so hot, dry, and scorching. Of cut herbaceous plants there were not fewer than eighty different lots put up for competition, thirteen collections of cut annuals, and ten collections of wild plants, and it was surprising to observe how well these wild flowers held their own beside the cultivated denizens of our gardens. Pinks and Pansies were shown extensively; and we think that the best stand of twelve Pinks we ever saw was shown by Mr Love of Kilburchan, in Glasgow; their size was immense, and marking good. Mr M'Farlane of Denny, who was second to Mr Love, had a good dozen. Mr Love was also first in sixes. Mr Waterson of Paisley was first with twenty-four blooms, and Mr Murray of the same place second.

Fruit, though not very extensively shown, was very good; the Black Grapes were specially so. Mr M'Conochie of Cameron House, Dumbartonshire, showed three bunches of Black Hamburgs that were perfect in every respect, and they were justly placed first; Mr Fowler of Castle-Kennedy was second with three very fine bunches; and Mr M'Millan of Erakine House, near Glasgow, third. The White Grapes, with the exception of three bunches of Muscats shown by Mr M'Conochie, were scarcely second-rate, consisting chiefly of loose bunches of Buckland's Sweetwater. Mr David Key, gardener, Craigends, exhibited, but not for competition, six very pretty Queen Pines. Mr Connon, gardener to the Duke of Montrose, Buchanan Castle, exhibited a fine box of excellent Peaches and Nectarines. J. & R. Thyne, as usual, filled a table with well-grown ornamental plants.

Besides those subjects we have referred to there were many others worthy of special notice, and their not receiving such must not be construed by their owners into a purpose on our part to pass them by independent of their merits—the fact is that we find it impossible to notice all, yet do not wish to debar ourselves from a remark about such as strike us most forcibly.

The directors, judges, and friends dined in Carrick's Royal Hotel, George Square, at half-past three o'clock, S. M'Culloch, Esq., in the chair, when a variety of subjects bearing more or less on the advancement of Horticulture were discussed.

INTERNATIONAL FRUIT SHOW.

We are very pleased to learn that the Directors of the Royal Caledonian Horticultural Society have determined to hold a grand international exhibition of fruit in Edinburgh in September 1869, open to all the world. Those conversant with such matters know that the splendid success which attended that which was held in the same place in 1865 gave a great impetus to fruit-culture, and we have little doubt but similar results will follow that which is now contemplated.

The great London Societies are by the force of circumstances compelled to have their exhibitions during the London season, when it is impossible to give such prominence to fruit as could be desired. The English provincial Societies generally hold their exhibitions to suit the early summer holidays, and fruit-growers feel that while the greatest possible encouragement is given to plants by the great Societies we have referred to, fruit does not receive that amount of encouragement its importance deserves. To meet this deficiency is the object of the projectors of the Exhibition of 1869, and we believe they mean to appeal to the leading growers of the country for that support which they received so readily on the occasion of the previous exhibition of the same character.

It is nearly impossible to make an exhibition of plants anything like international from the expense and difficulty of transport; not so with fruit. It can be packed at one end of the kingdom one day, and be at the other the next, at small risk and cost either of money or labour. In these circumstances we hope and expect that the directors of the Caledonian Society will receive such liberal support from all fruit-growers as will enable them to eclipse their former exhibition, which was admitted on all hands to be the greatest display of fine fruit ever seen in one place at one time.



THE ROYAL NATIONAL TULIP EXHIBITION.

(Extracted from the Gardeners' Magazine.)

THE exhibition for this season was held on Friday, the 29th of May, and following days, in conjunction with the National Horticultural Exhibition, at the Botanical Gardens, Manchester. An excellent schedule of prizes was issued by the committee, and was well responded to; forty-seven cultivators of the flower enrolled themselves as subscribers, and the Society was liberally supported by the Council of the Manchester Botanical Society, who gave a donation of £15, in addition to providing a tent for the exhibition, stages, bottles, &c. The judges were, as usual, selected so as to represent the southern, the midland, and the northern counties, and were Mr John Ball, Royal Nurseries, Slough; Mr Thomas Haynes, Derby; and Mr Thomas Leech, Hooley Hill, near Manchester. Their awards gave entire satisfaction, and more than £50 was paid away in prizes. Owing to the forcing nature of the season, the bloom in the southern and midland, and in many parts of the northern counties was entirely over, and many of the competitors had lost their best blooms; consequently the exhibition was an inferior one, only 1200 to 1300 blooms being staged, instead of 3500 to 4000, which would certainly have been staged had the season been an average one. Notwithstanding this serious drawback, many very fine flowers were exhibited; among the older varieties Sir Joseph Paxton was very prominent, figuring in most of the stands, winning the first and second in the flamed bizarre class; and a very fine flower, shown by Mr Whittaker, was awarded the premier prize for the best flamed flower

in the whole exhibition. Headly's Adonis, Heroine, Aglaia, Lord Denman, Violet Amiable, and many more old favourites, were shown in good style. Among varieties which have been in the hands of some growers for a few years, but are not generally so well known, were two or three beautiful specimens of Lea's Industry, Feathered Rose, a beautiful pencilled feather of cherry-scarlet colour on the purest of white grounds. Queen of England, shown by Mr Travis, was a fine feathered Rose. Several good specimens were shown of Ashmole's Lord Raglan, light pencilled feathered bizarre, colour dark brown on a fine yellow ground. This variety is sometimes named Lord Byron: this latter name ought to be discarded, as there can be no doubt but that they are both the same variety, and that Lord Raglan is the original name. Also were shown several fine specimens of Storer's Dr Hardy, flamed bizarre, the marking of a rich reddish chestnut-brown on a fine waxy ground of the brightest yellow. Ashmole's Garibaldi, feathered bizarre, feathering somewhat heavy, of a rich dark chestnut-brown colour on a yellow ground, similar in colour and substance to Dr Hardy. Storer's J. D. Hextall and Orion, both flamed bizarres, deep red on rich yellow grounds, were very good. Rachel, feathered Rose, dark in colour, but finely marked; a good acquisition to its class. Hardy's Ajax, flamed bizarre, and Talisman, flamed byblœmen, were shown very finely marked, but the blooms were too much decayed to win; both of these are grand first-class varieties.

Among new kinds and seedlings, Mr Whittaker exhibited a very fine feathered Rose seedling, the colour a bright cerise, the marking of medium weight, finely pencilled on a pure white ground; this flower won, and very deservedly, the premier prize for the best feathered flower in the exhibition. Mrs Jackson, a splendid feathered byblœmen, raised by Mr Jackson of Middleton, and exhibited by Mr Barlow, is of good substance and form; the colour of the feather is the nearest to black of anything yet raised, shining like a raven's wing; the feathering is of medium depth, well pencilled, and upon a pure white ground; this was the only flower of the variety which has bloomed this season, and had been in bloom three weeks. Mr Willison showed Marchioness of Normanby and Eliza, both very fine flamed byblœmens; also Seedling 673, flamed Rose, very good; Invincible, feathered byblœmen, finely marked, light purple feather, but, as we thought, somewhat deficient in substance and narrow at the base; Mr Lymbery, feathered bizarre, colour almost black on a pale yellow ground, the ground colour too pale, and the feathering too heavy and plated in character. Mr Hepworth, many very promising seedlings; the best that we noticed being 126/66, flamed bizarre, marking of reddish brown colour on a deep yellow ground; 7/65, very fine flamed byblœmen, in the style and shape of Walker's Duchess of Sutherland, but the colour of the marking much darker; 342/62, a fine byblœmen, in the style of Maid of Orleans, but quite distinct; 169/63, a very fine flamed Rose; and 21/66, another Rose of promising appearance.

We regret much the absence of many fine things from the collections of our southern and midland friends; many we have heard of and should have been pleased to have had the opportunity of noting. The forcing season deprived us of the pleasure of seeing many fine novelties from Messrs Headly, Haynes, Storer, Cresswell, Sharpe, and others.

The Breeders were very good, and all classes well represented. A large number of very promising seedlings were exhibited by Messrs Hepworth, Willison, Jackson, Schofield, Hardy, Bentley, and others. Mr Hepworth had a very large number; 169, Rose, and 61/62, byblœmen, seemed especially good; so also did Mr Jackson's byblœmen (second prize). It is very clear that the Tulip

fancy, especially in the northern and midland counties, is quite alive, and in a few years we may look for an accession of new varieties, against which it will be very difficult for many of our old standard favourites to hold their ground.

After the judging, twenty-eight of the members sat down to an excellent dinner at the Trafford Hotel, the president, G. W. Hardy, Esq., in the chair. Much regret was expressed that no body of florists came forward to take charge of the Royal and National Tulip Exhibition for 1869. York was suggested, but nothing definite was done, except that some twenty subscribers put down their names to support a continuation of the Society, wherever the exhibition might be held. Any society of florists wishing to take charge of the exhibition for 1869 are requested to write to the president or to the treasurer. Regarding a truly national exhibition of the Tulip, it is quite clear that north and south can never show on equal terms upon the same stage; upon an average, there is twelve to fourteen days' difference in the time of bloom; but, whatever may be the future of the Royal National Society, it is certain that the exhibition this year, in conjunction with the glorious display of the National Horticultural Society, which has been witnessed by above fifty thousand people, has given a great impetus to Tulip cultivation, and will result in the formation of a strong society of northern and midland counties growers, the exhibition open to the world, and the show-day fixed to suit the majority of subscribers.



Notices to Correspondents.

SPES.—We have never found fumigation with tobacco, or good tobacco-paper, fail to eradicate the green-fly. It is safer to fumigate two evenings in succession than to do so too strong once. In the latter case the plants are sure to suffer, especially if their foliage is damp. Get Dean's Patent Fumigator through your nurserymen and use it.

Lay down little pots with a bit of dry hay in each, where the woodlice (slaters, as you term them) congregate most, and you will find that they will gather into these nests in numbers; pick up the pots quickly, pull out the hay and shake the insects into boiling water. We destroy great numbers of them by placing saucers containing treacle in the neighbourhood of their haunts, and they drown themselves in it by the score.

B. H.—The date of the introduction of the Cedar of Lebanon into this country is uncertain. Aiton in his '*Hortus Kewensis*' makes it 1683, the date of planting the trees in Chelsea Botanic Gardens. These trees, and others at Chiswick, the seat of the Duke of Devonshire, still exist in good health, and are supposed to be the oldest in Britain. The Alders *Serrulata* and *Glauca* were introduced from North America, the former in 1782, the latter in 1820.

A SUBSCRIBER, ABERDEEN.—The Chavouch is not so hardy a Grape as the others you name: train up a rod from the Vine next it to take its place and cut it out, or, what is equally easy, inarch some other Vine on it as described in the treatise you have purchased.

A SUBSCRIBER.—The leaf you sent us is from the Abele-tree, *Populus alba*.

F. W., RECTOR OF M.—From what you say of the state of your shrubs, we advise you to cut them all over about 4 feet above the ground, except the Hollies. Leave them, unless they are very unsightly when the other shrubs are cut over. When you have cleared away all the dead branches, put 4 inches of rotten dung and fresh loam over the surface of the soil over the roots; it will greatly aid their recovery.

Your Strawberries should have borne a partial crop this year. They will very likely bear better next year, unless they are too much shaded by trees.


THE GARDENER.

SEPTEMBER 1868.

THE ROSE.

(Continued from page 328.)

CHAPTER II.

FROM the lukewarm to the earnest, from failure to success. Ten years ago, one cold slate-coloured morning towards the end of March ("hunch weather," as I have heard it termed in Lincolnshire, because, I suppose, a sense of starvation has a tendency to set one's back up), I received a note from a Nottingham mechanic, inviting me to assist in a judicial capacity at an exhibition of Roses, given by working men, which was to be held on Easter Monday. Not having at the time a Rose in my possession, although, to my shame be it spoken, I had ample room and appliances, and knowing, moreover, that all the conservatories of the neighbourhood were in a like destitute and disgraceful condition, it never occurred to me that the tiny glass houses, which I had seen so often on the hills near Nottingham, could be more honourably utilised or worthily occupied, and I threw down the letter on my first impulse as a hoax, and a very poor one. Hoaxes, I have observed, are not what they used to be when I took an active part in them; and, moreover, the proximity of the 1st of April made me more than ordinarily suspicious. Nevertheless, upon a second inspection, I was so impressed by a look and tone of genuine reality that I wrote ultimately to the address indicated, asking, somewhat sarcastically and incredulously, as being a shrewd superior person not to be sold at any figure, what sorts of Roses were so kind as to bloom during the month of April at Not-

tingham, and nowhere else. But return of post I was informed, with much more courtesy than I had any claim to, that the Roses to be shown were grown under glass—*where* and *how*, the growers would be delighted to show me, if I would oblige them by my company.

On Easter Monday, in due course, upon a raw and gusty day, when spring and winter, sleet and sunshine, were fighting round after round, like Spring and Langan, for victory,—winter now retreating, sobbing, and puffing to his corner, and now coming on in force, black with rage, resistless, hitting out hard and straight, until the sun's eye had a sickly glare, and the cold world trembled in his cruel hug and grip—I went to Nottingham. Again, as the hail beat upon the window of the rail conveyance, a horrible dread of imposition vexed my unquiet soul, and I was so cowardly as to give an evasive answer (our vulgar forefathers used to call it lying) when a friend among my fellow-passengers inquired the purport of my journey. Nor were my silly suspicions expelled until my hansom from the station stopped before the General Cathcart Inn, and the landlord met me, with a smile on his face and with a *Senateur Vaisse* in his coat, which glowed amid the gloom like the red light on a midnight train, and (in my eyes, at any rate) made summer of that damp and dismal day. Within his portals I found a crowd of other exhibitors, some of them with Roses in their coats like himself, and some without, for the valid reason, that they were there in their shirt-sleeves, with no coats at all, just as you would see them at their daily work, and some of them only spared from it to cut and stage their flowers. These welcomed me with outstretched hands, and seemed amused when, on their apologising for their soiled appearance, I assured them of my vivid affection for all kinds of floricultural dirt, and that I counted no man worthy of the name of gardener whose skin was always white and clean. No, a rich, glowing, gypsy brown is that one touch from Nature's paint-brush on face or hand, or both, which makes the whole world of florists kin, which is seen beneath the battered billycock and the shining silk hats of André, and which, whether the japanned ones get their garments from Poole or pawnbroker, whether they be clad in double-milled or fustian, whether they own a castle or rent an attic, unites them, heart and hand.

“Who shall judge a man from manners?
Who shall know him from his dress?
Paupers may be fit for princes,
Princes fit for something less.
Crumpled shirt and dirty jacket
May beclothe the golden ore
Of the humblest thoughts and feelings—
What can satin vest do more?”

“The Roses were ready: would I go up-stairs?” And up-stairs,

accordingly, with my co-censor, a nurseryman and skilled rosarian of the neighbourhood, I mounted, and entered one of those long narrow rooms in which market-ordinaries are wont to be held, wherein the Odd-Fellows, the Foresters, and the Druids meet in mysterious conclave, and where during the race-week and the pleasure-fair there is the sound of the viol and the mazy dance. What a contrast now ! The chamber, whose normal purpose was clamour and chorus from crowded men, we found empty, hushed, and still ; the air, on other public occasions hot with cooked meats and steaming tumblers, heavy with the smoke and smell of tobacco, was cool and perfumed ; and the table—you could not see its homely surface of plain deal, stained with spilt drinks, scorched by the expiring cuba, dented by knife-handles and by nut-crackers, when oration or ballad ceased, for it was covered from end to end with beautiful and fragrant Roses ! There was nothing to remind us of our coarser pleasures or of the tavern here, except, by the way, the bottles, which, once filled with the creamy stout and with the fizzing beer of ginger, now, like converted drunkards, were teetotally devoted to pure water, and in that water stood the *Rose*.

A prettier sight, a more complete surprise of beauty, could not have presented itself on that cold and cloudy morning ; and in no royal palace, no museum of rarities, no mart of gems, was there that day in all the world a table so fairly dight. As if to heighten our enjoyment of the scene, and just as we came upon it, the day darkened without, and the sleet beat against the windows as though enraged by this sudden invasion of Flora, and determined to fire a volley on her ranks ; but her soldiers only smiled more brightly at the idle harmless cannonade, just as the brave general on his sign outside cared no more for the rattling hail than, in the flesh, a few years before, he had cared for Crimean snow.

Nor was our first enjoyment diminished, when, from a general survey of this charming contrast, we proceeded in our judicial office to a minute and careful scrutiny. I have never seen better specimens of cut Roses, grown under glass, than those which were exhibited by these working-men. Their Tea-Roses—Adam, Devoniensis, Madame Willermorz, and Souvenir d'un ami specially—were shown in their most exquisite beauty ; and, coming down to the present time, I do not hesitate to say that the best Maréchal Niel and the best Madame Margottin which I have yet seen, I saw this spring at Nottingham, in the ginger-beer bottles ! Many of the Hybrid Perpetual varieties are shown in their integrity, a difficult achievement when days are short and dull ; and one of them, Alphonse Karr, I have never met with elsewhere of the same size and excellence. It is but rarely seen

at our great Rose-shows, never in its perfect phase; and I must frankly own that I have bought it, budded it, potted it, petted it, for many years in vain. Of course, in an exhibition of this kind, with difficulties to oppose which few dare to encounter and very few overcome, these poor florists must include among their masterpieces many specimens of medium merit and some failures. Among the latter I cannot forget a small and sickly exposition of Paul Ricaut, who, by some happy coincidence, which warmed my whole body with laughter, was appropriately placed in a large medicine-bottle, with a label, requesting that the wretched invalid might be well rubbed every night and morning. Poor Paul! a gentle touch would have sent him to *pot-pourri*!

When the prizes were awarded we left the show-room, grave and important as two examiners coming out of the schools at Oxford; and when the undergraduates—I mean the stockingers—had rushed to see who had taken honours and who were *plucked*, I went with some of them to inspect their gardens. These are tiny allotments on sunny slopes, just out of the town of Nottingham,* separated by hedges or boards, in size about three to the rood, such an extent as a country squire in Lilliput might be expected to devote to horticulture. And yet it was delightful to see how much might be, and was, done in one of these pleasant plots. There was something for every season:—

“The daughters of the year,
One after one, through that still garden pass,
Each garlanded with her peculiar flower.”

There, to cheer the ungenial days of winter, were the Christmas Rose, the Aconite, the Laurestinus, the Golden Holly, the Cheimonanthus fragrans on its snug bit of southern wall, with the large yellow Jasmine near, and the winter Violets beneath. There, to follow in the spring, the Mazereon, the Erica, the Berberis, the Snowdrop, Hepatica, Polyanthus, Crocus, and Tulip; after these the Lilac, Laburnum, Ribes, and then the Royal Rose. The straight standards, cleanly and closely pruned, firmly staked, and liberally mulched (blessed be the boy with donkey and cart, who goes to a cheap market, and sells accordingly!); the Manetti Dwarfs, full of vigorous wood—not the

* “No town in England displays the gardening spirit more manifestly than ‘old Nottingham.’ Independently of gardens attached to residences, there are, we believe, nearly 10,000 allotments within a short distance of the town; and as many of these are divided, and in some cases subdivided, it is not too much to affirm that from 20,000 to 30,000 of the inhabitants, or nearly one-half, take an active interest in the garden. And where will you see such Roses as are produced upon the Hungar Hills by these amateurs—such Cabbage and Lettuce, Rhubarb and Celery!”—*Nottinghamshire Guardian*, March 8, 1867.

stock, but the scion this time; the climbers tastefully trained over "the bower of Roses by," dare I say, "Bendigo's stream," seeing that the ex-champion is oft an angler in the waters of the Trent, hard by; all these acknowledge the royal supremacy, and the loyal love of our second Queen. And think what a refreshment for these working-men on a summer's eve, when their hot work is done, or on silent Sabbaths, when there is no work to do, "to sit 'mong the Roses, and hear the birds sing"—songs of praise and comfort and hope.

Meanwhile they have a foretaste of this gladness in the glass houses which I went to see. *Houses!* why, a full-sized giant would have taken them up like a hand-glass; and even I, but a small office-boy in connection with that great business,* was unable in most of them to stand upright, and into some to enter at all. I could hardly believe that the grand Roses which I had just left could have come, like some village beauty out of her cottage home, from such a mean dwelling-place; but there were the plants, and there were the proprietors, showing me proudly the stems from which such and such favourites were cut, and pointing to various healthy and handsome rose-buds, which, though belonging to junior branches of the family, gave promise of equal beauty.

How was it done? *De l'abondance du cœur*—from a true love of the Rose. "It's more nor a mile from my house to my garden," said one of these enthusiasts to me, "but I've been here for weeks, in the winter months, every morning before I went to my work, and every evening when I came from it, and not seldom at noon as well, here and back, and my dinner to get, between twelve and one o'clock." "How do you afford," I inquired from another, "to buy these new and expensive varieties?" And I would that every employer, that every one who cares for the labouring poor, would remember the answer, reflect, and act on it. "I'll tell you," he said, "how I manage to buy 'em—*by keeping away from the beer-shops!*"

From a lady who lives near Nottingham, and goes much among the poorer classes, I heard a far more striking instance of this floral devotion than from the florists themselves. While conversing with the wife of a mechanic during the coldest period of a recent winter, she observed that the parental bed appeared to be scantily and insufficiently clothed, and she inquired if there were no more blankets in the house.

* One of the first of many delicious stories which it was my privilege to hear Mr Thackeray tell, was, that once upon a time he and Mr Higgins ("Jacob Omnium") went to see a Giant, and that the man at the door inquired whether they were in the business, because, if so, no charge would be made for admission. Mr Thackeray was 6 feet 4 inches, and Mr Higgins not less than 6 feet 6 inches in height. As the Eton boy, describing a country fair, remarked in his Latin verse—

"Gigantesque duo, super honore meo."

"Yes, ma'am, we've another," replied the housewife; "but——" and here she paused.

"But what?" said the lady.

"It is not at home, ma'am."

"Surely, surely it's not in pawn!"

"Oh dear no, ma'am; Tom has only just took it—just took it"——

"Well, Bessie, took it where?"

"Please, ma'am, he took it—took it—took it, to keep the frost out of the greenhouse; and please, ma'am, we don't want it, and we're quite hot in bed."

They ought to be presented with a golden warming-pan, set with brilliants and filled with fifty-pound Bank of England notes.

I took my leave of the brotherhood at last, delighted with their gardens, and delighted with them, but not much delighted with myself. I seemed to have been presiding as Lord Chief-Justice in a court, wherein, had merit regulated the appointments, I should most probably have discharged the duties of usher. I had been enthroned as Grandmaster of a Rosicrucian Lodge, when I ought to have been standing at the door as tiler; and as I carried away a glorious bouquet of Roses, with their "best respects to the Missus," I felt ashamed to think how little I had done, and how much more such men would do, with my larger leisure and more abundant means. But when I reached the station and entered my carriage, I was roused from my reverie by a loud and prolonged "OH!" which greeted me from five of my acquaintances, as though I had been an asteroid rocket, which had just burst, and the Roses were my coruscant stars: and I was beginning to regain my self-complacency, and to find solace in the remark of one of my neighbours, who, I knew, had glass by the acre and gardeners in troops, that "they were the first Roses he had seen this year," when I was again discomfited by the insolent behaviour of the company—on this wise. To an inquiry from what garden the Roses came, I responded, in all truthfulness, "Chiefly from a bricklayer's." Whereupon an expressive sneer of unbelief disfigured each stolid countenance; and a solemn silence ensued, which said, nevertheless, as plainly as though it were shouted, "We don't admire tomfoolery." I collapsed at once into my corner, sulking behind my big bouquet, and looking, I fear, very like the Beast when he first showed himself among the Roses to Beauty; nor did I quite regain my equanimity until, reaching home, I had written and posted an order for an assortment of *Roses in pots*.

It would be very easy to multiply proofs that in Rose-growing, as in everything else, earnestness and industry, born of love,

"Di tutte le arti maestro è amore,"

must achieve success. At a flower-show which took place a few weeks ago at Oundle, and at which I acted as one of the judges,* the hero of the day was a Northamptonshire butcher, Thorneycroft of Floore, a name well known to rosarians. He told me that by rising early, sometimes at 3 A.M., and by working late, he had not only carried on an extensive trade, but had found time to put up three glass houses with his own hands; and that in addition to his plants, fruits, and vegetables, he had in cultivation six thousand Rose-trees, most of which he had budded, and all of which he had pruned and cared for himself. From his houses he showed some beautiful seedling Gloxinias, which won the first prize and especial commendation, and he also obtained the prize for a specimen plant of recent introduction, showing the pretty *Panicum variegatum* sent out last year by Messrs Veitch; and from his Rose-garden he won the first prize for twelves, and in the larger collection succumbed without discredit, as an amateur may and generally must, when he competes with a nurseryman, to Messrs Wood & Ingram.

Ascending some rungs of the social *scala*, passing from the blue-coat school of rosists to the black, we floral ecclesiastics may congratulate ourselves, thankfully and happily, upon our status in the world of Roses. And here again, how often will the poor curate, with something more than a good gardener's wages, and something less than a good gardener's house, show what earnest love can do! Whenever I see at an exhibition a white tie behind a box of Roses, I know (although I may have on one or two occasions irreverently exclaimed to my clerical friends, "Hollo, Butler, are you bringing breakfast?")—I know that, almost as a rule, bright gems shine within that case. And ah! who but he can tell the refreshment, the rest, the peace, which he finds in his little garden, coming home from the sick and the sorrowful, and here reminded that for them and him there is an Eden, more beautiful than the first, a garden where summer shall never cease!

And here I would ask permission to digress briefly, that I may confirm a very interesting statement which was made after our florist dinner at Leicester by the editor of 'The Gardener,' and received with hearty acclamations. He had been told, he said, by a Scotch clergyman, that in his visitations from house to house he had never met with an ungenial reception where he had seen a plant in the win-

* On this occasion some very pretty collections were shown, not only of wild-flowers, but of wild Ferns and Grasses. In three of the latter, exhibited by children of one family, I observed *Asparagus*; and upon my saying to the exhibitors that this was not contemplated by the schedule, my ignorance was at once enlightened—"Please, sir, it says Ferns and Grasses, and this is Sparrow Grass."

dow. It was a promise of welcome; it was a sign that there dwelt within a love and yearning for the beautiful; it was an invitation for the sower to sow. What tender memories, solaces, and hopes, may be brought into darkened homes by the brightness and the sweetness of flowers!

“The weary woman stays her task,
That perfume to inhale;
The pale-faced children pause to ask
What breath is on the gale.
And none that breathe that sweetened air,
But have a gentle thought;
A gleam of something good and fair
Across the spirit brought.”

It is gratifying to notice that this influence is recognised and encouraged more and more by the clergy; that, under their auspices, successful shows have been held in London, at which window-plants, and plants grown in yards and on roofs, have well deserved the prizes they have won; that allotments are more numerous near our larger towns; that at some of our barracks, soldiers have the opportunity of turning their swords into pruning-hooks (metaphorically, I mean, as an actual transformation might not be agreeable to the drill-sergeants); and that societies for the improvement of cottage-gardening are multiplying throughout the land. I may mention here, that for some years I have tried, satisfactorily, to promote, among the children of my parish that love of flowers which is innate in us all, not only by giving prizes for their collections of wild-flowers at our annual show, but by taking them walks on Sunday evenings, and helping them to collect and arrange their posies, teaching them names, habits, and uses, and showing them the coloured likenesses and the histories which are provided in a cheap form by the Society for Promoting Christian Knowledge, and in other illustrated manuals.

But I must cease now to babble of green fields, and must come away from the wild to the garden Rose.

S. REYNOLDS HOLE



FLOWER-GARDENING AND THE DROUGHT.

LAST year it was flower-gardening and the deluge, and so the enemies of modern flower-gardening had their fling and their chuckle at those who practise the massing of half-hardy plants. And this year the failure caused by the drought will afford cynics an opportunity for another rigorous reprehension of all that pertains to “bedding out,” as it is vulgarly styled. Did it never occur to those who are never satis-

fied apparently, except when raging at the popular style of flower-gardening, which should not of necessity interfere with any other style, that many of the dejected-looking clumps of 1867 were the fault of beds and borders which had never been thought of in connection with a drain, but were mere holes dug out of hard retentive soil, and forming a sort of cesspool to the surrounding ground, and a source of dropsical failure to the plants which had been unfortunately stuck into them as into a freezing machine? Or will it occur to them that the roasted skeletons of plants, with little left but their skins this year, are the result of poverty-stricken soil which has been merely scarified on the surface, and having a hard impenetrable pan of earth for a basis of growth? We know not of anything that is so much needed among the owners of small gardens as a garden missionary of the school of Jethro Tull, to rescue this delightful branch of gardening from the contracted doctrines and the starving preaching and practice of the jobbing gardener and his coadjutors. But lest we should apply the tawse too severely and be pulled up, we will, without recalling or mitigating those skelps, refer to some plants and some combinations which have been found effective and pleasing in the midst of a drought which has not been equalled for forty years.

The long continuance of wet throughout 1867 led us to anticipate a dry season for 1868; and as a means of meeting and obviating as much as possible the results, a very liberal dressing of well-decayed manure mixed with leaf-mould in equal proportions was deeply worked into beds and borders; and at planting-time deep planting was the rule, and the result is that plants were seldom more healthy or more beautifully bloomed. This is the rule, and the exceptions are as few as could be expected in any unexceptionable season. Indeed, they are entirely confined to two beds of *Calceolaria Canariensis*, which are planted on beds very much elevated above the surrounding ground. Artificial watering, except in the case of a very few things, has not been resorted to, and from the end of May till the beginning of August there was not sufficient rain to wet the ground to the depth of an inch. These facts are mentioned in order to show how ridiculous it is to condemn the massing system of flower-gardening as being a failure in a year of drought. In short, we would urge the facts as proof that this system, from its affording a chance of well working the whole mass of soil, is just the system best adapted for coping successfully with such a roasting season as we have just experienced.

Among the plants which have developed their beauty with increased splendour are *Verbena venosa*; *Tropæolum Cooperii*; white and purple Stocks; *Gazania*; *Centaurea ragusina*; *Polemonium cæruleum variegatum*; *Amaranthus melancholicus ruber*; the whole of the *Pelar-*

goniums. All these have been in a state of perfection unequalled here before. An edging, in the shape of two long lines of *Polemonium caruleum variegatum*, planted time about with *Viola cornuta*, is especially beautiful—we never had the *Polemonium* anything like so fine; and though the *Viola* hung fire for a while about the longest day, it is now fine, having been cut in when past its best the first time, and then watered occasionally, and it now bids fair to flower well the whole season. The stocks are extraordinarily fine, and have been since the end of June; while a quantity of those which flowered all the summer and autumn of '67 are still good, notwithstanding the drought and severe knifing for cut blooms. Among the combinations which have been most generally admired are two match beds of Flower of Spring Variegated Pelargonium, planted a little wide, and the ground completed with *Viola cornuta*. Then a broad band of Crimson King Verbena, and the edging of Golden Chain Pelargonium, which latter is yet by far the most effective Golden Pelargonium we have tried, and is far more effective than any of the Tricolors for distant effect. The shimmering beauty of the mass of light foliage and cerise blooms of the Pelargoniums, with the lavender flowers of the *Viola* peeping up amongst them, is very pretty and soft. To improve the bed, an edging outside the golden Pelargoniums of blue *Lobelia* might be added, especially where the groundwork of the garden is a light-coloured gravel. Bijou Pelargonium, yet one of the best variegated varieties, mixed in the same way with Purple King Verbena, and edged with Iresine Herbstii, is also very much admired: and so also is a large bed of Bijou with a single line of Verbena venosa thickly planted. Then a broad band of Verbena Crimson King, then a single line of Golden Chain, and the finishing-line of *Lobelia speciosa*. Verbena venosa, with a single line of Variegated Dactylis next it, and a finishing-fringe of Tropæolum Cooperii, is very effective. Chrysanthemum Sensation with a band of Crimson King Verbena is a good bed. The effect in the distance produced by the Chrysanthemum is very similar to Golden Chain Pelargonium. A large centre of Centaurea ragusina, banded with Dell's Beet, then a line of Dactylis, and a finishing-line of Pyrethrum Golden Feather, is very effective as a foliage-bed. The last-named plant is very pretty in the early part of the season, but as the season advances and it shows for flower, it loses caste and becomes useless as compared to Golden Chain Pelargonium. A bed of Stella Pelargonium edged with a broad band of Cineraria maritima, planted wide and mixed with Spitfire Petunæa—a very deep velvety crimson—is a very striking bed. A centre bed to a design on grass, being what is generally termed a hollow square with a small circle at each corner, has the body and highest part of the bed covered with Tropæolum

Cooperii, which is dotted over with *Centaurea* and *Coleus Verschaffeltii* alternately. On two of the flanks are a single plant of *Yucca recurva pendula*, and on the other two are *Arundo conspicua*; the centre of all being a plant about 6 feet high, of the fountain-like *Dracæna Australis*. In the four circles into which each of the four corners terminate is a groundwork of blue *Lobelia*, with a centre specimen in two of the circles of *Echeveria metallica*; in the other, two specimens of *Euonymus aureus reticulatus*. The whole bed is edged with *Cerastium tomentosum*. The general effect of this centre bed is striking and picturesque.

In long borders is a groundwork of Purple King, with panels of single specimens of *Centaurea* slightly elevated, alternating with 4-foot specimens of Irish Yew, round the bottom of which are rings of *Tagetes signata*. At the back of the groundwork of purple are a line of Variegated Pelargoniums and the finishing one of *Gladiolus Brenchleyensis* (perhaps the best *Gladiolus* grown for decorative purposes). The front lines are next the Purple—*Tropæolum luteum*, then Little David Pelargonium, with the finishing-line of *Cerastium*. Another is composed of a groundwork of *Verbena venosa*, with single specimens of *Centaurea* as panels, back lines of Variegated Pelargoniums and *Tritoma* and Prince Arthur *Dahlia*. Front lines of white Stock, next the *Verbena*, which is magnificent; then a line of Tom Thumb Pelargoniums followed with Golden Pyrethrum and Blue *Lobelia* in the order named. Another consists of a back line of white *Dahlia*; then purple *Dahlia* with a line of Christine Pelargoniums in front; then a 7-foot-wide groundwork of *Stella* Pelargoniums, with 4-foot specimens of *Yucca aloifolia variegata* for panels; then in front of the *Stella* groundwork a row of Christine, a row of Purple King *Verbena*, and one of Variegated *Dactylis*; then a 3-foot groundwork of Blue *Lobelia*, with small plants of *Centaurea* and *Coleus* alternately at intervals as panels in the blue, the front edging being *Cerastium*. Another narrow border in front of hothouses, back line *Perilla*, a line of white Stock, 3 feet of *Tropæolum Cooperii*, with panels of *Coleus* and a front edging of *Gazania*.

Among plants not hitherto generally used and on trial are, for a dwarf grey edging, *Santolina incana*. This most perfect gem, giving a dwarf edging as white as *Cerastium*, and much more compact and manageable, as it grows more densely, does not bloom, nor require clipping, and is more interesting to look at, being like a piece of coral reef; it is perfectly hardy. *Sempervivum Californicum* is a most charming edging-plant. (Referring to this plant reminds us of a circular bed very much admired, being divided into four segments, with lines of this *Santolina incana*, and two segment plants with *Gazania*; the

other two with *Lobelia speciosa*. As a panel in the *Gazania* there is a plant of *Coleus*. In the Blue *Lobelia* the panel is of *Euonymus aureus*. The edging-lines are of spring-struck plants of *Santolina*, the finishing-lines being of, first, large plants of the *Sempervivum Californicum*, with the last of all smaller plants of the same charming little rosettes.) *Tropæolum* Mrs Treadwell, sent out with such high character, has been planted on the same border with *T. Cooperii*, but in comparison with the latter it is simply useless. Mrs T.'s grows too much to leaf, and throws up comparatively few blooms, even in such a dry season as this. It may do for a wall, but not for massing. *Trentham Blue Lobelia* is of a good robust habit, but is not nearly so dark a blue as the ordinary *Lobelia speciosa* raised either from seeds or cuttings. *Festuca ovina glauca*, sent for trial by Mr Rae of Eglinton Castle, makes a charming, bluish-looking, compact, yet graceful edging-plant, which cannot fail to become a general favourite when better known ; it is quite hardy. *Ballota nigra variegata* is too much like a Nettle, and is not sufficiently white or variegated to render it worth growing. *Nepeta teucriifolia* deserves all the Squire's Gardener said of it last year as a lavender-coloured plant. It is more desirable than *Ageratum Mexicanum*, and is, besides, hardy. We had conceived that little improvement could be obtained in bedding *Pelargoniums*, but such varieties as *Glow*, *Glorious*, and *Vesuvius* promise great things. All three are as compact as *Tom Thumb*, but their flowers are vastly superior, while they are produced in numbers quite wonderful. Among a batch of *Tricolor Pelargoniums* *Lady Cullam* is the most highly esteemed ; and owing to its robust yet compact habit, and the high colouring of its zones, it promises to be a beat on Mrs Pollock. Next to it stands *Smith's Defiance* and *Louisa Smith*, both very good, and quite as free, if not more so, as Mrs Pollock. Of some new *Calceolarias* on trial it is not fair to speak, as the season has been much too dry and hot for them.

The weather was too arid and parching for sub-tropical plants generally, but they are now (15th August) growing rapidly ; and such things as *Lantanas*, *Seafortthias*, *Chamærops*, *Ficus*, *Tupidanthus*, *Dracænas*, *Cannas*, *Aralias*, &c., are doing well now.

D. THOMSON.



NOTES ON GREENHOUSE PLANTS.

(Continued from page 335.)

FERNs.

WHILE I advocate a rigorous system of syringing throughout the growing season of Ferns generally, beyond doubt it would be most injudicious to infer that no exceptions ought to be made with Gymnogrammas and other farinose species. To subject those to such an ordeal, would be effectually to obliterate or sweep away one of their most lovely and attractive features—that beautiful golden or silver powder with which the under-surfaces of their fronds are overspread. To avoid a consequence so disastrous, I deem it preferable to use a soft brush, therewith displacing any dust (while the fronds are in a perfectly dry state) from off such plants as are dangerous to syringe, and moisten the upper surface of the fronds with gentle sprinklings from a finely perforated rose. The moisture will then gather into large drops, and fall off the margins of the fronds without disturbing the farina beneath. It is an experienced fact that Ferns delight in a moist warm atmosphere, as also slight shade; but we cannot enter further on these heads, seeing they have no other choice than their companions in the greenhouse, unless a separate place be allotted them, naturally shaded with the other plants, when sprinklings can at all times of the day be afforded them without hurtful results.

Their Ornamental Uses.—Before closing, it may be acceptable to describe a few of the various modes of culture and ornamental uses to which Ferns are practically applied. Those methods are numerous, and among the foremost hanging baskets specially shine.

Among the different species enumerated in our list, the following may be selected as being the most applicable for that purpose: *Adiantum curvatum*, *A. cuneatum*, *A. pubescens*, are surpassingly pretty; *Davallias*, *Gymnogrammas*, *Aspleniums*, *Pteris serulata*, *Nothochlænas*, *Onychium Japonicum*, and a host of others whose habits and appearances constitute them equally commendable, though not mentioned in the list. Assortments of those grouped tastefully with shells and rustic and glittering stones, fringed with *Lycopodium denticulatum*, would not fail to captivate the eye of the most fastidious.

Planting.—We shall presume that the baskets are wire, painted—or, better, galvanised—and if not provided with inner linings of tin, patches of green moss taken from tree-roots or large stones serve the purpose well, when turned with the green facing out. These linings should be placed exactly so that their edges neatly overlap each other, without making this a means of filling too much the interior of the

basket, only enough to prevent the soil being washed out with the waterings. This part of the business accomplished, next proceed by filling the basket half up with the soil already prescribed, turning the Ferns carefully out with balls entire, and arranging them according to their heights from the centre towards the edge of the basket, planting a circle of *Lycopodium denticulatum* around the margin to form a fringe; then fill up the openings between the plants with the compost compactly, finally concealing the surface of the soil with the stones and shells, and thoroughly saturating the body of the soil by showering from a rose. They may then be suspended in a shady place until their fronds stand erect, after which their future attendance may be comprehended in removing the dead leaves, assisting the Lycopode by training, and providing water constantly and abundantly in hot weather, as it is obvious, if the soil get once dry, it is difficult to make it retain water, or even make it penetrate the soil again; and the consequence follows that many of the fronds flag, never to be induced to rise again, thereby giving what was once sprightly and green a sickly and indifferant look.

Table Decoration.—For this purpose Ferns are most appropriate; the effect of a few specimens placed in select situations approximate with silver and other glitter is most charming. True, they smart a little under the influence of the close heated atmosphere of the dining-room, nor can one suppose they inhale with benefit those savoury odours with which the air is flooded at times. This is obvious from their shrivelled and languid aspect after a prolonged stay among the dainties; but, upon the whole, those bad effects can be considerably modified by placing the plants in a cool airy house a few days before using; this will harden them in some degree to withstand the exhausting influences common to such places.

Miniature Rockwork.—This method of culture has already been described in the columns of the 'Scottish Gardener' (last volume); and I still consider the plan the best for small growers.

Culture in Cases.—Every one may daily see this can be conducted almost perfectly even with the common bell-glass, and every stage upwards to the large-sized, elaborately finished, drawing-room case. And while speaking of the latter, we may refer to that splendid case exhibited at the June meeting of the Royal Caledonian Horticultural Society by Messrs Wilkie & Paul, Fountainbridge, Edinburgh. The correct taste displayed both by elegance of case and arrangement of the plants in its interior, will leave a lasting impression on the memory of those who witnessed it and love the race.

Another mode of grouping will be found a good appliance in span-roofed conservatories erected with ends facing north and south.

Those houses are usually furnished with a centre stage, and with a path surrounding it. A table or stage running along the entire length of the north end, planted close to the wall, is a first-rate stance for Ferns, seeing they will have the advantage of the other stages and their occupants for a shade; besides, it will be found more interesting to have them ranged in mass before the eye. Appropriating this stance wholly to the use of Ferns and the *Selaginella* race, supposing it desirable to carry out this plan, the table ought to have a facing or moulding of about 3 inches in depth running along the edge facing the path. The object of this moulding standing above the table is partly to hide the pots, and the more effectually to carry out another end in view—namely, to place fine gravel over the table beneath the pots, planting patches of *Lycopodiums* and hillocks of minerals alternately in tasteful order, and arranging the specimens of Ferns and taller-growing *Selaginellas* in pots according to their heights, in lines without crowding; and in addition, each specimen ought to have its name printed in italics, and attached to the plant or pot. A table furnished after this manner will certainly be an improvement on the half-clad and lanky plants often occupying the shady parts of greenhouses, which sometimes cannot altogether be avoided owing to the construction of the houses.

TREE CARNATIONS.

As greenhouse plants these are fully established, and as objects of popular favour highly deserving: what can excel a perfect flower of that queen of the species, *Souvenir de la Malmaison*? Indeed, its creamy-white balls at certain stages of development are perfect imitations of the noble Rose of the same name; and what enhances its qualifications still further when brought into combination, are its very lengthened duration of blooming, and the high Clove odour with which it is possessed: when taken as a whole, these make it a subject to cope even with the Rose. But we must not expend all our praise on this single lady, well knowing that others of the same family are also extremely rich and beautiful, diffusing delicious fragrance around, while the whole race may be esteemed the *first* for the nose-gay.

The species *Dianthus caryophyllus*, from which the varieties of Carnation are said to have originated, we are informed, is indigenous to England; others again assert that we are indebted to Italy for it. One thing is clear, that the period of its introduction is shrouded in mystery, leaving one unable to say more than “lang syne—Lord knows how lang.” Possibly it may have been brought from sunny Italy by some jolly monk who delighted in flowers as well as “good ale.” However,

one thing is apparent, that the Carnation has lost none of its interest with age, but has been fostered and cultivated with an eye to improvement by each succeeding generation up to the present moment.

Propagation.—Tree-carnations are propagated from seed and by layers and pipings. The former should be sown throughout the summer in pots or pans amongst light maiden loam with a small proportion of pure sand, covering thinly with the fine siftings of the compost, then placing them near the glass in a cold frame, keeping constantly shaded, and the soil sufficiently moist until the plants appear, when they may be inured to the light and air admitted copiously. Transplant the seedlings, as soon as they have made a few leaves, into thumb-pots; return them to the frame again, and encourage fresh growth with shading in hot sun, and keeping up abundant ventilation and moisture at the roots, until they are size sufficient to demand pots of larger dimensions—say pots 4 inches diameter—in which they may be allowed to produce their first blooms. That the quality of their flowers may be justly tested, only a few buds ought to be permitted to expand on each plant; the crown buds, of course, and say two more of the strongest. After selecting the finest from the stock, cut back the flower-stems and provide larger pots according to strength of individual plants, adding about one-sixth the bulk of soil of old well-reduced cow-dung. Continue the same system of culture as regards potting, airing, watering, and shading under powerful sunshine; and as winter approaches, quarters should be allotted them in a dry airy house, securing them from frost, and by all means from damp, to prevent mildew and other malady.

Training.—There are various modes of training, all looking well enough in their style—viz., pillar, standard, and dwarf-staked; for either case the plants cannot be kept over-vigorous. All that is necessary for the standards is to continue growing one leader upwards, pinching back the laterals as they are formed until the desired height is attained. When the crown is pinched out and the last set of laterals left, pinch them in their turn to produce others after they have made four joints. Having accomplished all this, and that all may not end in disappointment and ruin, be careful when exchanging the main stake that supports the head, as a single jerk may behead the plant, leaving nothing but the naked stump. It will be found best to temporarily secure the head while in the act of giving a fresh stake. Pillar-plants differ so far in their training, that pinching ought to be commenced 6 inches above the pot, and the growths regularly stopped as each set reaches or adds another 6 inches to the height; only it is advisable to allow every alternate growth to go on unpinched after the plants have acquired reasonable strength to bear flowering. This

will keep up a succession of blooms over a considerable portion of the year.

Dwarf-staked plants are secured simply by pinching at every third or fourth joint until the desired number of growths is obtained, staking and tying in the growths as they advance.

Propagation by Pipings.—This is managed by taking off the young shoots when sufficiently long, dressing away the lower pair of leaves, and cutting the stem cleanly across below the lowest joint; inserting those cuttings in pots well drained, the soil being loam and silver-sand in equal portions mixed, pressed firmly, and an additional layer of the sand made smooth over the top. Proceed next to insert the cuttings about $1\frac{1}{2}$ inch apart, pressing the soil firm to their stems, finishing the operation with a good watering from a rose. Cover the pots with hand-glasses, and place them in gentle bottom-heat, and manage as regards shading, &c., as recommended for seedlings. But in addition to those directions, damp must be guarded against by admitting a little air into the interior of the glass now and then, as well as removing the vapour on the sides. Cuttings placed in bottom-heat of 65° in the beginning of September ought to be well rooted at the end of the month, thereby giving time enough for their being established in their first shift of pots before winter.

In conclusion, attention must likewise be paid to free and good drainage, pressing the soil firm in their pots, disbudding when large flowers are wanted, maintaining the plants healthy throughout by keeping them free from mildew and dust by syringing now and again, in airy weather affording copious ventilation, and a little guano added to their water after the flower-buds are formed; and should mildew affect any of the plants, immediately apply a dusting of sulphur.

A. KERR.

(To be continued.)



FRUIT-CULTURE.

(Continued from page 332.)

THE MELON.

OF the various modes of growing Melons, that which may be called the modern one of growing them like Vines, trained to wires, either in lean-to or span-roofed pits or houses, is at once the easiest and most elegant. The former is the best adapted for the production of early Melons, the latter for late summer and autumn crops. A lean-to house or pit should be from 10 to 12 feet wide, with a path along the back,

four rows of 4-inch pipes along the front, and immediately inside of them a brick pit 3 or 4 feet wide. In this pit there should be two rows of 4-inch pipe for bottom-heat; over these two rows of pipe; Caithness flags, slate slabs, or any pavement that can be had, should be laid so as to allow 18 inches in depth of soil for the plants. By the aid of valves, arrangements should be made for working either of these sets of pipes separately.

The front of such house may be a dead wall, with wooden ventilators 2 feet long by 1 foot wide at distances of 5 feet. These openings should be so placed that the air admitted by them should pass up through amongst the four rows of pipes, so as to get the chill taken off it before it gets to the foliage of the plants. There should also be means of ventilation at the top of the house. The wires to which the Vines of the Melons are to be trained should be at least 16 inches from the glass, and at right angles with the rafters.

As already remarked, we think equal span-houses or pits running south and north are the best for growing Melons in the heat of summer. They should be about 12 feet wide and 9 feet high at the apex, at which point a ridge should be made to rise by any of the many contrivances now in vogue for such a purpose. We prefer the plan of the parallel rulers and lever, with ratchet-teeth to graduate the air, to some of those more complicated and mechanical, but less efficient plans we frequently meet with. Ventilation should be provided along both fronts, the same as recommended for the lean-to house; but instead of four pipes for surface-heat two will do along each front, and one for bottom-heat in each pit; for the path should be along the middle of the house, and a pit on each side of it.

We have already remarked that plants which are to be grown in houses such as we have described should not have their leaders stopped, nor should they be allowed to get their roots matted round the inner sides of their pots before they are planted out. Prepare the beds of soil in the pits of good friable calcareous loam, rather firmly packed and pressed down with the hand: say that the young plants are in pots 5 inches in diameter; then procure a pot for each 7 inches in diameter, knock the bottoms out of them, and reduce their depth by chipping off the lower part of their sides till they are about 5 inches deep; plunge them till only 3 inches of their sides is visible above the soil of the pit, then *shift* the young plants into them, using soil that has been warmed in the house, and that is moderately moist; give a slight watering with tepid water through a rose, and the operation of planting is finished. The plants will soon root down into the soil, and their necks, being elevated above the general level of the border, can easily be kept dry when it has to be

watered. This in great measure prevents that bane of Melons, the canker at the surface of the soil. When this disease makes its appearance, sprinkle a little dry lime over the wound ; this, if it does not cure, protracts the course of the disease. Care should be taken never to wound the Vine by pulling off a leaf near the surface of the soil, as this induces canker rapidly. The leading stem should be trained up the wires, say 5 feet, before it is stopped, and the foliage kept free from red-spider by sulphuring the pipes once a-week. It is found to be of advantage to the health of the plants, as well as to some extent a preventive of the attacks of red-spider, to evaporate water from saucers in which a little guano has been stirred. As soon as the leading stem is stopped, it will throw out laterals over its whole length, on each of which, as a rule, there will appear an embryo Melon. These laterals should be stopped two leaves beyond the fruit ; and as soon as the latter expands its bloom, it should be *set* by means of the pollen of a male flower. Once set, the fruit soon begins to swell, and will require support. Some effect this by means of saucers tied to the wires by strings passed through holes bored in their sides, and it answers very well. We prefer plain pieces of earthenware of a porous nature made for the purpose, with a hole at each corner, to which to attach a piece of elastic. This yields with the growth and weight of the Melon, so as to give it room to swell, and the plain porous earthenware prevents the accumulation of moisture round the fruit when resting on its side. If the plants set a heavy crop of fruit, it is advisable to give them one or two waterings of the drainage of a dunghill, or of water with a little guano dissolved in it—say at the rate of 1 oz. to the gallon ; but if the Vines are rank and the fruit thinly set, give nothing but pure tepid water, and that not more frequently than once a-fortnight. As soon as the Melons show signs of ripening, give no more water at the root, but give air more freely, that the fruit may be of good flavour. It is a good plan to plant a house of Melons by degrees—half one week and half the next—with plants at least a week younger ; this prolongs the supply of fruit from the same house. Again, there are Melons that come sooner to maturity than others, and this gives succession of fruit. The Cocoa-nut Melon, for instance, will keep a month sound and good after it is cut and laid in the fruit-room. It is almost hopeless to attempt a descriptive list of Melons. We have grown several very distinct varieties from seed taken from one and the same fruit. There are classes that may be referred to—as, for instance, the Cantelopes amongst the red-fleshed are good bearers and of hardy constitution. Among green-fleshed varieties, also of hardy constitution, may be named the various varieties of the Egyptian

Green-fleshed Melon. More tender, and requiring a higher temperature, are the varieties of the Persian Green-fleshed Melon, and others from the same quarter of the world. For making a pretty dish at dessert, the small Turkish Melon, striped orange and green, is worth growing; it does not require much heat, and is a great bearer, but it is barely eatable. For keeping long after it is ripe there is no Melon like the Cocoa-nut Melon—named such because its shape resembles the Cocoa-nut. Another difficulty in attempting to classify Melons is, that they have local names; any one raising from seed a good variety, which happens to take a prize at an exhibition, immediately names it after the place where it has been grown, or perchance after himself.

W. T.



ORCHARD-HOUSES IN THE MIDLAND COUNTIES.

It is my happy fortune to live near a friend who has an orchard-house, from which I venture to think I derive nearly as much pleasure as my friend himself does (inasmuch as I am his frequent companion); in fact, he has the trouble and expense of it, while I have only the pleasure. Now, in the "golden prime" of August, it is filled with trees covered with ripe and ripening fruit; the Peach, the Nectarine, and the Plum hang fair and tempting; while good crops of Pears and Apples promise an ample supply of fruit later on in the year. Cherries and Apricots are over. Vines (which are not in pots, as are the other trees, but are planted in the earth, and carefully trained up the pillars which support the roof, and hang from it in festoons) do not keep the sun off the trees, but slightly shade them, greatly to their advantage. There will be an excellent crop of Grapes towards the end of September: those of last year came in very nicely when the hot-house Grapes were over.

As you enter the orchard-house you pass under an arch formed by a fine Gloire de Dijon and Maréchal Niel. These were covered with Roses in June; and though their beauty is nearly over, there are blooms on them now, and there will be through the remainder of the summer. You pass down the middle walk, on each side of which are ranged the trees in large pots; there are likewise two side-walks, and on the side-borders are placed Camellias, which are forming their buds, and Orange-trees, lately covered with fragrant blossoms.

The house is 80 feet long, 30 feet wide, and 7 feet high at the sides; the walks are paved with black and red tiles, in a diamond pattern, and beneath the flooring at the south end is a large cistern, which

collects the whole of the rain-water which falls from the roof. Its aspect is north and south, thus enabling the sun's rays to travel over the house, and avoiding the excessive heat at mid-day, when they fall direct upon a slanting roof: the position in which an orchard-house is placed contributes materially to its success. The house was erected about four years ago, somewhat after the model of the houses belonging to Mr Pearson of Chilwell; it is glazed at the ends and sides with 16-oz. glass, and the roof with 20-oz. glass: the roof is also made in separate lights, and, if occasion require, the whole structure can be removed without breaking a pane of glass. The building complete was erected for less than £200; it is well stocked with trees from the nurseries of Rivers of Sawbridgeworth, Pearson of Chilwell, and Smith of Worcester. There are about seventy Peaches and Nectarines, fifty Plums, forty Pears, ten Apples, thirty Cherries, twenty Apricots, and twenty Vines: the whole stock cost about £40. The orchard-house is pleasant at all times of the year. In winter, "when the stormy winds do blow," and all is bleak and bare outside, and it is too cold to take our usual "constitutional" in the garden, my friend and I pace up and down the long walk under glass. On each side of us are the trees, packed together as closely as possible, the pots imbedded in litter: thus is frost prevented from attacking the roots, and the little of it which gets into the house does good rather than harm. About Christmas last year the house presented the appearance of a winter garden; bordering the middle walk was to be seen a fine collection of Chrysanthemums and Camellias, all in flower; the bright show these darlings made, contrasted strangely with the bareness of the outside world. Winter is, of course, the season of rest—here, then, in peace and quiet, we smoked the fragrant weed, and

"Discussed the books to love or hate,
Or touched the changes of the state,
Or threaded some Socratic dream."

In spring the scene changes. With the first warm days the trees begin to unfold their blossoms—first the snow white of the Apricot, then the Cherry, then the Peach, the Plum, &c. The change appears magical—a few days ago all was dry and bare; now spring, like a mighty enchantress, has waved her wand, and all is life and beauty. The house is like a fairy garden, the bees throng in to taste the sweets, and we are never tired of admiring. Nor is the useful overlooked. The side-borders are now sown and planted with Peas, French Beans, Cauliflowers, and Potatoes; thus supplying my friend's table with early vegetables, and rendering him in some measure independent of the garden, which often disappoints us, for in these midland counties

spring frosts are our greatest enemies. Early Salads and Herbs delight my friend's worthy cook. Plenty of Fennel, Mint, Lettuces, with Mustard and Cress (all grown under glass), leave that important functionary nothing to wish for.

Many happy hours have I spent listening to my friend's description of the different varieties of blooms presented by each kind of fruit, until I have become almost as learned in such matters as he is himself, and can tell by looking at the blossoms the name of the Peach or Nectarine. It is something to be able to distinguish a Grosse Mignonne from a Royal George by merely looking at the flower.

The trees themselves, being trained as pyramids, bushes, and standards, are each perfect in their shape, and literally covered with blossoms. I can only compare them to the masses of bloom on the Azaleas at the horticultural exhibitions. Here I need an artist's pencil; no words can give an idea of their beauty. As spring advances, the blossoms fade, like the beauty of youth soon past, but giving promise of a vigorous manhood. Now the trees are covered with leaves and clusters of infant fruit. Then the gardener is incessantly occupied in thinning; thousands of peaches, &c., are removed, while great care is taken to keep every tree free from filth. The house is closed whenever there is an east or cold wind; my friend's theory being, that if the flow of sap in the young wood is ever suddenly checked by a cold wind or draught, debility ensues; defective root-action and blight, with black and green aphid, are the inevitable results.

Blight rarely attacks trees which have completed their growth; young and tender plants are its most frequent victims.

Stoning-time is a very critical period in the history of the fruit-tree; any decline in its health or vigour (whether this occurs from excess of watering, want of sufficient water, or by any other means) will cause it to drop its fruit; or if the fruit remains on, it becomes malformed and flavourless. At this period my friend is chiefly occupied in "summer-pinching," and "stopping" the young shoots which are intended to bear the crop of the following year. Here I must not forget to mention, that when the spring vegetables are removed, the side-borders of the house are made gay with Geraniums for bedding out, which, to save the trouble of repotting, are planted here to harden them off before they are transferred to the open ground. This spring they were particularly gay; Christine and Stella were a mass of flowers.

This brings me to summer. First, late in May we have Cherries and Mulberries. June, July, and August give us Apricots, Peaches, Nectarines, and Plums in great abundance, to be succeeded by a fine crop of Grapes and the choicest French and Flemish Pears. It is impossible to be certain of those Pears in our variable climate, excepting under glass.

A specimen of the *Maréchal de la Cour* from a plant in a pot last year weighed 23 oz.! I was permitted to taste it, and can truly say that the flesh was most rich and luscious. Amongst other fine kinds, Gansel's *Sickle* pleased me much. Though small, it was a very handsome pear, delicate in flavour, and had a most powerful aroma.

Perhaps I may be permitted on another occasion to give some particulars of the management of the orchard-house, and some account of the many varieties of Peaches, Nectarines, and Plums in this collection, but any further mention of them now would make this paper too lengthy. It occurs to me that one of the greatest advantages of an orchard-house is the prolongation of the fruit season, the first-fruits being gathered in the month of May, and Peaches of a late kind last year were not over until November. It remains to make a proper selection of the different varieties of trees, to insure a lengthened season of enjoyment.

A few days since I visited the orchard-house of another amateur in the south of Yorkshire; it is 70 feet by 22. The fruit-trees were very vigorous and healthy, and were covered with a fine crop; a little more thinning would have produced finer fruit. The house contained, besides Grapes, Plums, and Pears, about one hundred Peach and Nectarine trees, which have now about four hundred dozens of fruit, some of them of very large size.

I am certain that an orchard-house might be made very profitable if the fruit were grown to sell, because, after the first outlay, labour is the only expense. In my friend's case this is not the object; with him it forms an agreeable relaxation after hours of heavy toil.

I cannot close this paper better than by using the words of Lord Bacon in his 'Essay on Gardens;' they are not inapplicable here:—

"God Almighty first planted a garden; and indeed it is the purest of Humane pleasures. It is the greatest refreshment to the Spirits of Man, without which Buildings and Palaces are but gross Handy-works."

N.

20th August 1868.



WINTER CUCUMBERS.

Now is the time, the middle of August—it will not be too late when this is printed—to sow Cucumber-seeds for winter. I do not know if there is any magic in dates; they were formerly more attended to; seeds were to be sown to a day: certain it is, however, that energetic measures should be taken, under whatever circumstances, to get in a

crop about a certain date, if it is expected to be there at another certain date in prospect: for instance, those who wait for rain before bedding-out would have a long time to wait this year. The same with regard to winter vegetables; we cannot afford to wait in our climate; the loss of a week is a great deal. For our own part, we are old-fashioned enough to believe a little in dates, and the 12th of August is a marked date in our calendar. On that day, 'tis said—for we never have seen—that much blood is spilt on the moors. Up to that date we continue to feel complacently that the season is yet before us, but on its arrival we feel some regret, as it is marked as the signal for commencing in earnest for the coming winter. Cuttings of all sorts must be got in from the flower-garden, a whole list of seeds must be sown in the kitchen-garden, and indoor plants for winter decoration must now absorb special attention; and the Winter Cucumbers must be sown also, with which only we have at present to do. We on a former occasion, in the pages of the 'Scottish Gardener,' drew attention to a plan of our own for their culture, which we still pursue, the chief feature of which is simply the confining the roots into small space—a long, shallow, narrow box, with one pipe in the bottom for bottom-heat, the bulk of soil being no more than 20 inches wide by about 9 inches deep—up to February, thus giving the plants complete command over the soil, and necessitating frequent waterings, instead of a large bulk of inert soil, which requires water but seldom. The seed is sown singly in small pots, half-filled with drainage, giving but little water until in the rough leaf, when they are shifted on into 6-inch pots. By the second week in September they are fit to plant out in the box, which is prepared by having a few inches of broken bricks placed in the bottom, to distribute the heat, on which turf is then laid, after which a few inches of soil are spread on the turf, and little hills are made on which to plant the Cucumbers, in order to keep the necks of the plants high, as it is found that in after management, when top-dressing is necessary, it is much against the wellbeing of the plants to earth the stems up high, as they do not so readily throw out roots when the stems get old and woody. A vigorous growth is encouraged with a brisk heat and plenty of air, husbanding the energies of the plants by not allowing them to fruit much up to November. Our standard sorts have, as a rule, been Lord Kenyon's; but Master's Prolific, much used about London, and a first-rate sort called Nicholl's Prolific, we also grow. We are satisfied that any white-spined sort is as good as another for the purpose; indeed, there is no end to the favourite sorts for winter forcing.

Last year, out of thirteen plants grown in the winter not two were exactly the same; they were from seed saved from Lord Kenyon's,

accidentally crossed with a large black-spined variety. The offspring were, some black, some white spined, some very rough, some quite smooth, and some were almost white in the spine, but with the merest tip of black : they were simply a vile collection of mongrels ; but the results were equally the same, all equally prolific, and never more plentiful. So we have come to the conclusion, that if the conditions of management are favourable, any sort may be grown in winter with success.

The soil we use is fresh, fibrous, yellow loam, strong in texture, but lightened with sand and leaf-soil not much rotted : very rotten leaf-mould gets clammy and fungous. Under this mode, care must be taken that the bottom part of the soil does not become too dry ; watering must be thorough. With overdryness, thrip soon shows itself ; but even with the greatest care it is impossible to steer clear of thrips, from the incessant use of fire-heat ; and the Cucumber plant being in a tender growing state, these jumping gentry seem to be very fond of it. We used to keep it in check with tobacco-smoke, but have given it up entirely ; our Cucumber-house was not once smoked last year, nor this, up to this time. We rely entirely on the syringe, every day carefully used to the under side of the leaves, so as not to injure them : we find it a much safer agent against these vermin, besides benefiting the plants. Although, when the Cucumber-plant is grown short-jointed and strong in the foliage, the tobacco-smoke does not do it any apparent injury, still, repeated smokings have a certain prejudicial effect on it, especially in winter. It must be mentioned that they are grown on a wire trellis overhead, so that it is easy to get at the foliage with the syringe. We also pursue another certain plan for the destruction of thrips, by simply wetting the tip of the forefinger and pouncing on them unawares : this may seem tedious, but if the man in charge has an eye to the game at every opportunity, it is wonderful how this plan alone will keep the pest in check. Slight topdressings of fresh soil given often is an admirable plan to keep up continued vigour in the plants throughout the winter ; it is preferable at this season to liquid-manure. As the days lengthen out in February the plants will gain in strength, and will bear stimulating with a heavier topdressing and strong liquid. A Cucumber to be good must be swelled off quickly, with plenty of moisture in the atmosphere and at the root ; in short, the whole plant must be in a vigorous growing condition to do so. We scarcely think it necessary to speak of the training and pinching of Winter Cucumbers, as every one knows how this is done before attempting to grow them at all.

A few words on what we think a good Cucumber ought to be. The destiny of the Cucumber is the pantry, for the manipulation of the

under-butler: that functionary being master of the Salads, we have found it of importance to study his ideas on that particular branch of supply. Well then, having got his Cucumber, he proceeds to flay it by cutting upwards thin slices of the skin in short lengths all round; he then cuts an inch off the end, and with a thin sharp knife commences the most scientific part of the operation by cutting the remaining part into marvellously thin slices with practised dexterity and rapidity, the point of the thumb being the guide, each time the knife passing right through the Cucumber until he reaches the handle or, neck, which should be short, for no other reason that we know save to prevent waste. Now, in order that this can be done to his satisfaction, the Cucumber must be straight, smooth in the skin, and of small circumference; he abominates a thick or a crooked Cucumber. Moreover, it must be young and of a bright-green colour, the usual guarantees of crispness of texture and good flavour. Of course, the longer the Cucumber, with these aforesaid qualifications, the better it is supposed to be. We have often been amused at flower-shows to see most formidable specimens staged for competition, bulk being the only apparent qualification—long and thick as a rolling-pin, and of a blue-black colour, with just a faint anticipation of the coming yellow appearing about the neck; and it may be a beautiful bloom all over, which last is one of the things we never could understand, like Lord Dundreary, as a qualification of a good Cucumber, since it has to be flayed before it is eaten, unlike a Hamburg Grape. There is a great deal in a name, and the principle is evidently recognised in the nomenclature of the Cucumber. Neepseed's Atlantic Telegraph would be expressive of two admirable qualities, length and uniform diameter; while Beetler's Boomerang would certainly be something to avoid.

THE SQUIRE'S GARDENER.



NEW PLANTS OF THE PAST MONTH.

TAKING up our record at page 344, being somewhat in arrears owing to the vast number of the new subjects continually being produced during the summer months, new Ferns again challenge attention. Of these the following have received first-class certificates:—*Trichomanes crispum*, *T. maximum*, and *T. fimbriatum*, all handsome and fine forms, from Mr B. S. Williams; to a charming *Adiantum* species from Peru, shown by Messrs Veitch & Sons; to *Adiantum rubellum*, from the same; and to *Polystichum angulare* Pateyi, a very beautiful form, said to have been found wild during a ramble in Devonshire

by Mr Patey, Milton, near Steventon. Of all that large number of new Ferns that received first-class certificates at the Leicester meeting, amounting to nearly fifty kinds, space cannot be found here to detail them. They were all hardy Ferns, and comprised forms of *Athyriums*, *Polystichums*, *Scolopendriums*, *Aspleniums*, *Adiantums*, and *Lastreas*, many of them very curious and interesting.

Of new plants, Messrs Veitch & Sons have received first-class certificates for *Alocassia Chelsoni*; for *Croton Veitchii*, *C. tricolor*, and *C. Hillii*, the former having long leaves variegated with reddish yellow, the last being also a fine kind; for *Dracæna Macleayi*, from the South Sea Islands; *D. Chelsoni*, and *D. nigra rubra*, a handsome kind, with dark-red leaves; for *Ampelopsis Veitchii*, a close-growing hardy Creeper, something like a Virginian Creeper; for *Nepenthes Hookeri*, a beautiful plant, with large pitchers mottled with brown; and for *N. rubra*, a smaller species, with reddish pitchers; for *Phormium Cookii*, a narrow-leaved erect-growing New Zealand Flax; and for a *Puya* or *Dyckia* species, a very curious and singular-looking plant, with hard spiny leaves and a great branching upright flower-stem bearing green blossoms, with a bright metallic lustre and prominent orange anthers: to Mr B. S. Williams, for a very handsome crimson-pencilled *Amaryllis*, named *Loveliness*; and for *Thrinax nobilis*: to Mr J. Burley, for *Caryota sobolifera magnifica*, or Date Palm: to William Marshall, Esq., for two new *Cattleyas*, one from Guatemala with yellow blossoms, the other named *Cattleya Prinzii*, with warm brown flowers and a dark purple lip: to Messrs J. & C. Lee, for *Quercus Concordia*, a handsome golden-leaved Oak; and to the same for *Euonymus aureas elegantissimus*, an extremely handsome hardy Shrub, which will form a suitable companion to the silvery-leaved kind produced by the same firm some time ago. In addition to the new *Gloxinias* shown last month, Messrs Veitch & Sons have received first-class certificates for *Don Louis de Portugal* and *Fleur de Flandre*, and second-class certificates for *Mons. Alphand* and *Souvenir de Brongival*, and the same award for a large-leaved species of *Cinchona*. A beautiful seedling *Ixora*, named *Amabilis*, received a first-class certificate; it resembles *Javanicum* in colour, but has larger trusses of flowers.

Coleus Carteri, from Mr Ley of Croydon, received a second-class certificate. It is evidently a sport from *C. Verschaffeltii aureus marginatus*, but much brighter in colour. A similar sport, but not so effective in colour, was produced by Mr Green, gardener to W. Wilson Saunders, Esq. of Reigate, Mr Saunders stating that he had exhibited it less on its own account than to direct attention to the fact that the dry season has been very productive of sports, that he thought these sports

would prove fixed in character, and that when such remarkable alterations in the dryness of the atmosphere occur, sports are sent up, and people should be on the alert to detect them.

Still more double Pelargoniums, and it does appear as if they will presently be in great demand. Messrs E. G. Henderson & Son received a first-class certificate for *Triomphe de la Reine*, a very promising variety, with crimson flowers; and Mr James Tomkins received the same award for *Sparkhill Beauty*, a variety in the way of *Madame Lemoine*, but deeper in colour. Both of these give a nice variation in point of colour; and so does *Victor*, shown by Mr George Smith—a fine variety, with very bright orange-scarlet flowers, which also received a first-class certificate.

Of the Golden Variegated Zonale Section, a first-class certificate was awarded to Messrs Carter & Co. for *Ettie Beale*, a brilliant-coloured variety, with finely shaped and richly marked leaves. Of Silver Variegated Zonals, first-class certificates were awarded to Messrs J. & C. Lee for Mrs John Clutton, and to Messrs E. G. Henderson & Son for *Lass o' Gowrie*, both being capital additions to the silver-edged class: the latter is finely marked, and has a bright appearance; the former appears to gain a point or two in regard to the free and compact growing habit.

Some very fine kinds of the Gold and Bronze Zonal Section have been further shown by Messrs Downie, Laird, & Laing, and received first-class certificates—viz., *Crown Prince*, *Harrison Weir*, *Charming*, and *Red Ring*, all finely marked and robust-growing kinds, of great promise. Messrs F. & A. Smith of Dulwich have received first-class certificates for *Arab*, *Criterion*, and *Goldfinder*, in the same section as the foregoing, and very fine and distinct.

The old forms of the Variegated Pelargonium, having green leaves edged with white or silver, have stood the test of the hot season as well, if not better, than any of the others, and this fact should be noted for application by-and-by. A splendid variety in this section is *May Queen*, shown by Mr C. Turner, Slough, and awarded a first-class certificate; the habit is excellent, and the dark green of the leaves contrasts well with the broad white edging. *Flower Queen*, another variety from Messrs E. G. Henderson & Son, received a second-class certificate; it is something in the way of Mrs Kingsbury, but has a broader edging of white.

Of Nosegay Pelargoniums the following have received first-class certificates:—B. K. Bowley, from Messrs Downie, Laird, & Laing, with immense trusses of brilliant reddish-scarlet flowers, something in the way of *Le Grand*, but deeper in colour; and *Lizzie*, from Mr Geo. Smith, a novel-coloured and desirable variety, having salmon-coloured flowers

flushed with orange in the centre and dashed with violet at the tips. *Zonale Pelargonium Delicatum*, from Mr Cunningham, Burton-on-Trent, received the same reward; it has salmon flowers dashed with carmine round a white eye.

Lobelia Distinction, one of the perennial section, and very like *Beauty of Ravensbourne*, from Messrs E. G. Henderson & Son, received a first-class certificate; and a second-class certificate was awarded to Messrs Ewing & Child of Norwich for one of a similar character named *Fairy*.

The following *Verbenas*, raised by Mr C. J. Perry of Birmingham, have received first-class certificates: Mrs C. J. Perry, purplish violet, with large pale eye, fine colour, pip, and truss; *Florence Fyddian*, lilac suffused and edged with rose, and narrow ring of rose round a straw eye; pip of very fine form; *Spot*, rich salmon pink, with small crimson centre, a beautiful and pleasing shade of colour; and Mrs Reynolds Hole, one of the most beautiful varieties ever raised, the flowers pure white, with a bright crimson centre, the pip stout and smooth. Other new kinds shown by Messrs Perry & Eckford of Colehill, though very promising, were not in good condition owing to the excessive heat and drought. R. D.



CASTLE-MARTYR—DEATH OF THE EARL OF SHANNON.

By the death of the fourth Earl of Shannon, Horticulture, and especially Arboriculture, has lost one of the best and most devoted patrons. The late Earl was an invalid for the last five years, and died about the beginning of last month at Blarney, where he chiefly resided since his health failed.

There are few noblemen or owners of gardens that understood better, or so kindly sympathised with, gardeners, and their efforts to improve gardening; and the arrangements of his own fine gardens bore testimony that he desired his gardener to uphold a respectable position, and enjoy full freedom of action.

The late Earl of Shannon was a reader of the 'Gardener,' and it may interest other readers to hear a few particulars of Castle-Martyr and its beautiful trees, in which the Earl took great delight, and so successfully cultivated.

Readers of the 'Gardeners' Chronicle' are familiar with the many concise notes on tree culture with the signature of "Shannon." Those who have visited Castle-Martyr have seen how thoroughly Earl Shannon understood and practised what he wrote upon. Castle-

Martyr is a flat place, and lacks that beautiful picturesque which gives such a charm to many residences in the south of Ireland. The pleasure-grounds are extensive, but considerably broken ; and one of the chief features—the Pinetum—is in the “deer park,” some miles distant from the mansion. The entrance to the home grounds is no way attractive, but on arriving at the bridge which spans the water that flows from the upper to the lower lake, the scene becomes impressive, refined, and with an exuberance and variety of vegetation highly interesting. The lakes are artificial and extremely well arranged, and the cascade below the bridge is excellent in its effect. One side of the upper lake is closely planted with fine trees of Evergreen Oak, and the fringe broken with Cardinal Willow and Red Dogwood, pruned so as to give the greatest amount of twig ; and when we saw it, late in December, the effect was fine. Following the side of the lower lake, the ground is planted with rare trees and shrubs, separated by sweet glades of grass. Here are some fine specimen trees, amongst which beautiful pyramidal *Abies morinda* are noticeable. In the part of the grounds called “Bridgetown Garden” are the famed borders of Camellias. One border of the Camellias is of large size, and has been planted many years ; and when we saw them a few years ago, the plants were in splendid health. The borders are several hundred feet long, and a wall runs on one side, against which was erected some years ago a skeleton iron frame, on which is put some slight protection, such as calico or branches of Spruce, to protect better the blooms from injury by blashy weather. There is no protection whatever given on account of the plants. Such varieties as the Double White, Waratah, Colvilli, and others of that class, are the size of large Portugal Laurels. Great numbers of the newer varieties have been planted, and seemed to thrive, with few exceptions. Near the Camellias is a border of Indian *Azaleas* in fine health. Be it known that these plants are not planted out and left alone ; they were well *cultivated*, and the whole thing was to the writer a most imposing sight. In this old garden there are many fine specimens of rare trees ; a *Cryptomeria japonica* in 1863 was 39 feet high, with a girth of stem at 4 feet from the ground of 4 feet 3 inches—had been planted eighteen years then. A *Wellingtonia* two years ago was 20 feet high, and a fine specimen. A giant Cypress is a remarkable object. This striking tree is 60 feet high, with a girth of 13 feet. So fine is the Portugal Laurel in this garden, that we had some doubt if the plants were really the same variety we had been accustomed to see. A Lucombe Oak was pointed out—planted about eighty years—measuring 75 feet in height, with a girth at 4 feet from the ground of 8 feet 9 inches. On the way back to Castle-Martyr, some fine Bamboos, New Zealand Flax of great size, and many

rare shrubs, make the walks very interesting. The flower-garden close to the mansion is a fine piece of garden-work ; critics may question its appropriateness to the position, but the style and keeping, as we saw it, left no question of refined taste and rich design.

The extensive kitchen-gardens are at a convenient distance from the mansion, and the whole arrangement of fruit and plant houses in first-rate keeping. In the kitchen-garden is a very remarkable tree of *Edwardsia grandiflora* ; the tree is 25 feet high, and at 4 feet from the ground the branches measure in circumference 116 feet.

At the time of our last visit there was an extraordinary quantity of Violets grown,—there could not have been much under an acre of ground under Violets ! Even in that fine climate the flowers from frames were chiefly depended on in winter. Lady Shannon used to send on “ St Patrick’s Day ” (17th March) to the Lord-Lieutenant at Dublin a bouquet of Violets 3 feet in diameter ! The bouquet was made up artistically of small bouquets, which were divided by Vice-royalty among the guests after the feast.

We now leave Castle-Martyr and drive to the “ deer park,” to see the Pinetum. This park is extensive, and contains some fine young plantations of forest trees, as well as good old timber, particularly some Scotch Fir ; one large tree measured was 89 feet high ; at 4 feet from the ground 11 feet in girth. Larch measured over 70 feet high, with a girth of 7 feet 6 inches at 4 feet from the ground. *Pinus Pinaster* 73 feet high.

The ground selected for the rare *Coniferæ* is a broken valley with a ridge or large natural mound in it, with higher ground surrounding ; no site could be better chosen, and the preparing of the ground was thoroughly well done ; the admirable growth of the trees will remain as evidence of the practical talents of the late Earl Shannon as an arboriculturist.

The most striking feature of the Pinetum is a large number of *Araucaria imbricata* planted near the base of the mound already spoken of : these trees are in the most robust health, and, when we saw them, without a spec or mark of disease. We have never seen *Araucarias* with such fine uniform healthy leaves, and no doubt in such a position they will grow up into fine trees. It is worth remark that about Castle-Martyr the *Araucarias*, where of good size, look sickly, clearly showing that this peculiar tree will only succeed on *suitable soil*.

On the ridge over the *Araucarias* are planted trees of the *Pinus* tribe, and along the valley on the left of the mound is a group of the most charming *Coniferæ* to be seen in the United Kingdom. We note below the measurements of a few of the most striking, and the

time planted ; but mere size gives no idea of the freshness and forest-like growth of these trees, compared to most that we have seen of the same class. The measurements were taken in 1863.

Abies Douglasii, 47 feet ; planted fifteen years.

Abies pinsapo and *A. Cephalonica* ; fine trees.

Picea Nobilis, 27 feet ; planted twelve years.

Picea Webbiana, 28 feet ; planted fifteen years.

Cedrus Atlantica, 37 feet ; planted eighteen years.

Pinus monticola, 28 feet ; planted fifteen years.

Pinus Laricio, 44 feet ; planted twenty-two years.

This brief and imperfect notice conveys but a faint idea of Castle-Martyr : it is, however, a willing tribute to the memory of a nobleman who was in every sense a great gardener.

Castle-Martyr has been under the management of some excellent gardeners, and for the last eight years under the direction of Mr Begbie, who has so creditably managed and added new features of interest to the place.

C. L. D.



HORTICULTURAL DISTINCTIONS.

DURING the past eighteen months the Royal Horticultural Society has applied a new principle to the disposal of their fellowships ; that of granting them, with all the attendant privileges, to certain persons who at times have rendered the Society important services. These important services relate to the assistance rendered by these individuals to the Royal Horticultural Society when arranging the preliminaries of their great provincial exhibitions. Thus, in 1867, Mr D. T. Fish received as a free gift from the Council of the Royal Horticultural Society all the privileges of a forty-guinea Fellow for the term of his life,—this forty-guinea fellowship representing privileges equal to that enjoyed by a person subscribing to the Society four guineas per annum, or in one payment of forty guineas. This was given to Mr Fish in recognition of the value of his services at Bury St Edmunds, in the capacity of Honorary Local Secretary. In like manner, within the last few weeks, fellowships of a like value have been given to Mr W. P. Cox, who acted as Honorary Local Secretary at the recent Leicester meeting, and also to Dr Buck and Mr Thos. Charlesworth for assistance in the same direction. The kind of service rendered may be generally described as pecuniary, having relation to the ways and means by which the Society should be able to carry out its provincial exhibitions, and not directly connected with the promotion of the interests of horticulture. This principle, we may reasonably suppose,

will be applied annually as long as these provincial shows may last, and it is not necessary that the person receiving the distinction should be a practical horticulturist.

The service done was rendered to the Royal Horticultural Society, not to horticulture. Indirectly it might serve the interests of horticulture, but not directly so. The Royal Horticultural Society has never yet recognised in this manner services rendered directly to horticulture. A F.R.H.S. can be easily obtained by paying for it: any one who chooses can possess the right to inscribe these four initial letters after his or her name. The distinction they carry represents merely so much money subscribed, either annually or in one payment, to the Society. They do not designate necessarily a single iota of horticultural attainment, but that the wearer or owner, whichever you please to call him, earns the right *only* because he pays for doing so. He may not know a Dahlia from a Dandelion, or an Apple from a Vegetable Marrow, but he may write F.R.H.S. after his name by paying two guineas per annum. Practical horticulturists of note—the sinew and brain of the horticultural world—distinguished gardeners (for there are distinguished gardeners as well as distinguished soldiers, or politicians, or theologians), practical, clear-headed amateurs, famous nurserymen, and plant-collectors with a world-wide reputation—set small store on such a distinction, and pass a mild smile of contempt when they contemplate some of its associations.

The R.H.S. could devise some step by which a mark of honour could be conferred for horticultural acquirements on those who obtain a front rank in the horticultural world, in whatsoever way they may leave their mark on its annals. The ordinary F.R.H.S. would not be appreciated by many—would not be accepted by some; but the Royal Horticultural Society could form a group that might be denominated “Associates,” to be confined solely to those who have made a name in horticulture by the good service they have rendered to it. These Associateships should carry all the privileges of a forty-guinea fellowship at least, with such others as might be attached to them. The number of such Associates should be restricted, so that only the very best men might be advanced to such a position. The mode of appointment or election would be a somewhat delicate question to decide, but it is a difficulty by no means insurmountable. Once ventilate the matter, and apparent difficulties in the way of its application will soon pass away.

I cannot do better than close this paper with a quotation from the October number of the ‘Gardener’ in last year, the writer being its esteemed editor: “Shall we ever live to see the day when an order of merit shall be instituted to reward those who, by great skill and labour

bestowed through a long course of years, shall make valuable additions to our stock of plants, whether these be food or pleasure yielding? A thousand a-year of public money and a position on the roll of fame, is very often worse bestowed than it would be if it were distributed in rewarding our Myatts, Ingrams, Turners, Pauls, Grieves, Jackmans, and Turnbulls; for if it be true that he who makes two blades of grass grow where one grew before is a benefactor to his country, what shall we say of men who have given us noble fruits, beautiful flowers, and nutritious vegetables? Let us hope that with the march of civilisation a light will dawn which will lead to the recognition of real merit, though that should happen to be found in humble walks of life—humble in the eyes of those who estimate by the tinsel, and not by the man; for we claim a high position for him who, by a close study of the laws of nature, as seen in operation in the subjects he deals with, so controls and applies these laws as that they result in the production of a new and much-improved variety that is to be a boon to man in all parts of the world, and probably in all time: the power to create alone takes precedence of such ability.”

QUO.



HINTS FOR AMATEURS.—SEPTEMBER.

At this season, when there is so much planting and pricking out of vegetables in a young state, slugs and other pests require to be looked sharply after. Young Lettuce and Cabbage plants which are to stand the winter offer a good bait for these vermin. Grubs are often found in great numbers, especially on ground after Onions. They are generally found near the necks of young Cabbage, where they soon commit great mischief; and it is only by examining the plants carefully that these grubs can be found and destroyed. Lime seems not to affect their hard coats, though a small portion of fresh lime placed round each plant, and well scattered over the surface of the ground, acts as a preventive. Lime-water, clear, given two or three times during the first week after planting, is the most effectual remedy we know. Deep trenching (which should always be done for vegetables to be planted now) buries eggs and whole colonies of vermin; and a good dusting of lime all round and over the fresh soil keeps unwelcome visitors off till the plants are too strong for them. Slices of Turnips, laid all round the garden, and turned up every morning, will secure great numbers of slugs. There will be a considerable amount of work for some time to come to keep gardens orderly. Peas, Beans, and other crops will require clearing off as soon as they are done with, and

the ground to be prepared for planting Cabbage, Coleworts, &c., or for sowing Spinach or Onions. We cannot urge too strongly the necessity of deeply trenching for these two crops, especially the latter, which have to stand over a hot dry summer. We have seen more really good and really bad crops of Onions this season than we ever saw before—the former on deeply-trenched ground which has been well supplied with manure, and the latter on poor shallow light soil, where the drought had it all its own way. Peas, French Beans, Cauliflower, Turnips, and Lettuce, have been finer with us this season than for years past, the extraordinary drought apparently acting more with a beneficial effect than otherwise. We trench deeply for almost every crop, and have plenty of manure always at command. Plots of Strawberries which are finished may have the trimmings of others (which are to remain for next year's supply) wheeled on, and the whole trenched down; throwing the rough material in the bottom, with a quantity of soot, making the surface moderately fine, will make a good preparation for a full crop of Cabbage for next summer's supply; and when the same ground is trenched after the Cabbage, will make a good brake for Onions and Spinach to stand the winter. Much can be done to insure success by looking a season or two "ahead." Young Cabbage for spring planting should be pricked out into a position sheltered from the easterly winds: at the bottom of a wall or some other fence is a suitable spot. Where there is little shelter, ridges may be thrown up sharply, and the seedlings pricked out, well watering with a rose on the watering-pot, if necessary, and keeping the surface nicely stirred. The plants will do well in ordinary winters. We use these means for Cauliflower and Lettuce to stand the winter. The hardier kinds of Lettuce are necessary, such as Brown Cos, Hardy Hammersmith, and Brown Dutch.

Pricking out Cauliflower in a frame, to be protected with mats or glass-lights when weather is severe and very wet, is a general practice where early Cauliflower must be had. Early Cauliflower, for first crop, is grown on sheltered borders or ridges under hand-glasses, pricking from six to nine under each glass, which can easily be thinned out in spring. The glasses require to be taken off or the tops turned round to give fresh air in mild weather. The plants must not be drawn or kept "coddled" when in a young state, as they would not stand the weather, and damp off in winter. Earth up Celery (not covering in the hearts); when required soon, a good soaking of water a day or two before "earthing up" will be of great service in securing crisp Celery. Dust the crop well with lime if slugs are troublesome. All suckers should be kept off later crops, to allow the plant to have full justice. Earthing up all at once can be performed when the

crops are fully grown. Some think, however, that the one earthing does not secure such crisp Celery. Endive may be blanched by tying it up, keeping the hearts close from light. Some place boards or slates over it, which answers well ; but if the position is damp, or the season wet, the Endive is liable to rot. Lift Potatoes as soon as they are fit ; store them away dry ; keep the small and unsound ones separate. Medium-sized Potatoes make the best seed. They should be dried well and placed away in cool quarters thinly, where frost can be kept from them in winter. Tomatoes are fine mostly everywhere this season. We never had them so fine on open borders and on ridges before. They were turned out of 8-inch pots when coming into flower. The haulm was placed on slates, and the roots were planted in holes made in the solid ground, and well mulched over the fresh rich soil which was placed round the pot-bound ball of roots. They had good soakings of water several times during the season. A quantity we have in pots plunged at the base of a wall can be lifted under protection from frost, or glass-lights placed over them, and mats used at night, till they finish their crop. We are putting in cuttings of Tomatoes now for spring supply. Ridge Cucumbers, Vegetable Marrows, and French Beans can be protected with frames, hoops, and mats, or other means, to prolong the supply. Wooden covers for night-protection are perhaps next to glass for throwing off cold rains ; but glass can be used in the daytime as well when winds and rain are cold : proper glass structures for these tender vegetables to be placed over them now, would keep up a supply for many weeks after unprotected crops were done. Carrots, Beetroot, and Parsnips may be taken up as required, and taken up altogether by the end of the month, and stored away thinly, throwing a little dry straw over them. Sand, if at all damp, often destroys the whole crop. We generally leave Parsnips in the ground all the winter, and dig them up as required. Onions may be pulled, and dried a day or two on the ground, and the stalks pulled off to within a few inches of the bulb ; then tie them in bunches, or, what is better, to straight sticks, and hang them in an open airy shed, where rain only is kept off. Ours last year (not very well matured), treated thus, kept in excellent condition. The last of them showed little signs of growth in July. The use of straw when bunching Onions, we think, helps to draw damp and induce growth ; or what is worse, is having an Onion-house in a damp position, or laying the Onions on a floor where wind or air does not play on them from all sides. Onions in such positions can hardly be expected to keep till the following summer. We string them to iron rods (the remains of old fences), and hang them to the rafters of a shed open to the north.

The fruit-room should now be made ready for storing the fruit. Let everywhere be clean ; the walls white-washed if they are plaster. All crevices where insects or mice can find shelter should be filled up. This done, a quantity of sulphur placed on a shovel with a little fire may be burnt, which might be strong enough that no animal could live in it ; and after the fumes have passed away, abundance of air may be allowed to circulate through the room, which should be quite dry. Fruit should be gathered in dry sunny weather if possible, which will tell on its keeping qualities. Bruising, however, and light will cause premature decay. Those which have fallen should be kept by themselves and used up. Apples and Pears are fit to pick when their pips turn dark in colour. Careful handling and thin storing have very much to do with fruit-keeping. After the fruit is placed on the shelves, abundance of air must be given for a week or two till all moisture has evaporated ; then keep the windows dark and the room closed. Whenever fruit is gathered, the trees are greatly refreshed by using the engine freely among the foliage. This is more applicable to wall-trees, such as Plums, Peaches, Cherries, &c. Insects, such as wasps and flies, will require careful looking after, as formerly directed. Birds (after the corn is cut in the fields) often return to gardens in great force, and attack Pears, Apples, and other fruits. Nothing but careful netting will keep them off. No laterals should be allowed to appear on the trees after this season ; and every shoot required for next year should be carefully nailed or tied in so that every fruit-bearing surface may have the full benefit of sun and air. Root-pruning (a practice we look upon as a necessary evil, timely lifting rendering it unnecessary to any extent) may be proceeded with this month, so that the "cuts" may be healed and the roots have taken to the soil before the change of the foliage. Cut underneath the tree, taking off any strong tap-roots clean ; fill in the soil, adding clean fresh loam next the roots, making the whole quite firm. The front of the roots can be cut away, leaving a large body of soil untouched. The operation should not be so severe as to cause flagging of the leaves, as the perfecting of the fruit-buds would be at stake. This, I believe, has been a good season with many for small fruit, although we read reports of many failures. We never had a finer season for Gooseberries, Strawberries, Currants, and Raspberries. The drought was kept out by giving a good mulching of manure over their roots, and a coating of dry earth over the manure to keep the whole tidy.

Propagating of flower-garden plants will now be well advanced. If there have been any failures, fresh cuttings should be put in without delay. Any kinds which are scarce may be lifted and potted in light rich earth mixed with a little sand, first trimming the long

roots off and reducing the stems and leaves. This applies more to Geraniums, Verbenas, and Calceolarias. Those rooted should be kept cool and exposed to sun and air to harden them, avoiding excessive moisture and frost. Calceolarias do well when put in late in the month and kept cool. Carnations and Picotees, when rooted, may be cut off and potted if necessary. All hardy plants of this description keep well attached to the stools all winter, and cut off and planted in spring. When potting them, plenty of drainage is necessary, and good turfy loam with the admixture of sand and a little soot. Every particle of earth should be examined for grubs and wire-worms. Dahlias may have a little protection thrown over their roots by the end of the month, such as earth or coal-ashes; frost may be expected, and would do great damage. Cuttings of tea-scented Roses may be taken off with a "heel" to each, placing them in any cool glass structure where frost can be kept from them. Hybrid Perpetuals can be propagated by cuttings in the same way, and placed in sandy soil in the garden. Hardy annuals sown now and established before winter will make a display early in the season, when gardens are bare and flowers scarce. Bulbs of most kinds may now be planted or potted this month. Hyacinths, Narcissus, and Tulips for early flowering may be potted soon. Roman White Hyacinth is a pretty early flowering kind; they may be planted thickly in the pots, as their appearance singly is diminutive. Most bulbs thrive well in good turfy loam, rotted cow-dung, and a little sand, well mixed; three in a pot of each kind make a good display, though, for exhibition, one bulb in the centre of each pot is enough. When potting, let the bulbs be half covered and pressed moderately firm; let the pots be placed on coal-ashes outside, and covered with old tan, leaf-mould, or sand about 5 inches. When the bulbs have sprung about an inch and the roots are active in the pots, they may be placed in a cool frame and kept free from frost and heavy rains. To have them early they may be brought on in gentle bottom-heat, keeping them well aired and near the glass; when the flower-spikes appear they may gradually be taken to a greenhouse temperature to flower. Tulips and other bulbs require the same treatment. Chrysanthemums will require to be gone round their balls (if in open ground) with a spade preparatory for potting them. Towards the middle of the month they may be lifted, potted with good rich soil, placed in the shade or in a close frame for a short time, then placed in their blooming quarters. Watering may always be done in the morning now.

M. T.

JACKMAN'S NEW CLEMATISES.

At Woking, in Surrey, and in the month of July of the present year, I saw in the meridian of its glory the last new sensation in bedding-out: the scene, the garden of the dwelling-house of Mr Jackman, of the Woking Nursery; the sensation, some of those beautiful new Hybrid Clematisses of which Mr Bateman has well said that "they are all of the most magnificent type." They are magnificent; and more than this, they do give us some of the grandest things in the way of creepers the horticultural world has ever seen.

Their pedigree can be given in a few words. To China, and to the enterprise of Mr Robert Fortune, we owe the beautiful mauve-coloured *Clematis lanuginosa*—a veritable horticultural sensation in its day. Some eight or ten years ago it occurred to Mr Jackman, of the firm of Messrs Jackman & Son of Woking, to hybridise *C. lanuginosa*, which yields pale mauve flowers, with *C. viticella atro-rubens* and *Hendersoni*, which have very dark-red-purple flowers. The result has been the production of a batch of seedlings, yielding flowers of great beauty, rich in lustrous colours, making them glorious ornaments either for walls, verandahs, or rustic poles or pillars, varying in colour from deep rich violet-blue to dark velvety maroon; and in the newer seedling forms, beautiful shades of pale bright blue. In the large majority of these hybrids, the habit of *C. viticella*—hardy, wiry, quick-growing—was reproduced, allied to flowers of great size and massive proportions, so profusely produced as to furnish a mass of floral drapery quite unique in character.

Of these new Clematisses, four of them have received names and been distributed—viz.: *C. Jackmanni*, with flowers fully as large as those of *C. lanuginosa*, the colour being of an intense violet purple, marked with a somewhat faint maroon-crimson stripe down the centre of each segment of the flower; *C. rubro-violacea*, with flowers of a deep reddish purple or plum colour, remarkable for the brightness which pervades the surface of the flowers; *C. Prince of Wales*, having large flowers of a rich deep violet-purple hue, with a reddish-maroon flame down the centre of each petal; and *C. rubella*, colour rich velvety claret, the hue of red preponderating—very showy, deep in colour, and quite distinct in character.

These, together with some later flowers not yet announced for sale, have been selected from successive batches of seedlings, and all so generally good that the difficulty has been, not what to select, but what to reject.

On the grass plat fronting the mansion at the Woking Nursery are to be seen a number of beds planted with these and other forms of

the Clematis. Two immense kidney-shaped beds, occupying corresponding positions on the right hand and on the left of the lawn, were occupied by seedling Clematises, forming portions of the same batches from which the foregoing named kinds had been selected. These beds had a kind of groundwork of dense foliage about 12 inches in height, from which sprung innumerable flowers,—

“Things that look as if they would be suns,
So beautiful, unnumbered, and endearing—
Not dazzling, and yet drawing us to them.”

It is only reserved for those that can look upon these beds to realise some idea of their superb beauty, from the time that the first blooms expand till the last fade away. The plants in these beds are placed about 18 inches apart over it, and pegged down in one direction, one over the other; the branches become thus interlaced, and form in the spring a mass of rich luxuriant foliage, which the early summer crowns with an even sheet of flowers quite enchanting as a floral picture.

A simple but happy accident, as the sequel shows, suggested to Messrs Jackman & Son the happy idea of using these Clematises for bedding purposes. It is their practice to grow these new hybrid varieties on poles like hops, round which they form dense masses of bloom; and as small plantations of these are to be seen, the effect is very fine. A storm laid some of these poles low, the dense bushes allowing of a firm gripe of the blast. The plants began to break out freely, and throw up their blossoms so as to form an even surface. Thus was suggested the use of Jackman's new Clematises for bedding purposes. These beds are edged with some variegated-leaved plant—such as *Lonicera aureo-reticulata* (of course pegged down), *Vinca elegantissima*, *Stachys lanata*, *Cineraria maritima*, and other such suitable things, as the gorgeous mass of flowers require only some marginal colour to fully bring out its beauty.

In these plantations of pillars or bushes the colours are mingled, and have a charming effect, as here and there the white forms of *C. lanuginosa* contrast favourably with the more robust and freer-blooming forms of the new hybrids under notice.

Messrs Jackman & Son also employ them in another form with the happiest results. Huge heaps of roots are collected together, round these the Clematises are planted, and soon become covered with the rapid luxuriant growth the plants make. But one or many colours can be employed at discretion. At any rate, grown in this way, they are singularly effective, and have a very striking appearance. None of them appear to yield superabundant wood; every branch

becomes a mass of bloom, radiant with glorious tints of violet and purple. They are most prodigal in the production of flowers, as if in the first dawn and bloom of a young creation it could not too lavishly yield forth the grand gifts it is commissioned to bear to the sons of men.

R. D.



NOTES ON HARDY HERBACEOUS PLANTS.

TROPEOLUM SPECIOSUM.

THIS beautiful hardy herbaceous Climber is of comparatively recent introduction, having been brought to this country from New Granada about 1846 ; and, notwithstanding its rare grace and beauty, it is not yet very generally cultivated in private gardens. Only within the past few years have its fine qualities been recognised, and a demand sprung up for it among amateurs ; while professional gardeners are even yet tardy in giving their recognition of its merits—a fact that is curiously suggestive of the tendencies of taste at the present time. A plant such as this, it might be thought, with flowers of brilliant scarlet, and foliage and habit of growth the most graceful, would not be long in winning many admirers ; and if some easy and quick mode of developing its beauty were hit upon, no doubt its admirers would be numerous, and the fame of the lucky fellow that discovered how to save time and trouble would be endless. But, as a rule, the plant does not establish itself readily in any place, no matter how favourable it may be to its healthy existence : it flowers little if at all the first, and not much the second, year after planting ; but from the third or fourth year onwards there is a rich reward for the exercise of patience and care. Such tardy progress is scarcely tolerable in this railroad age. There must be very little waiting for results, and only a short step must bridge our efforts and the effects in the flower-garden, or we impatiently discard the materials as unfit. Unfortunately, therefore, for the universal popularity of this charming plant, it will not be coaxed into early effectiveness ; yet many, when it becomes better known, will be pleased to wait a little for such a treat as it ultimately affords. Another hindrance to its becoming universally cultivated lies in its being fastidious—almost capricious, indeed—as to soil and situation. It reaches its greatest strength and beauty in a rich, moist, deep soil, and in partial shade ; but while I have seen it yielding all its beauty in the north of Scotland, planted in thin soil and clambering over a bald granite rock rising a few feet out of the soil, and in the same neighbourhood luxuriating on one of the finest but most wind-raked terraces in the country, I have also seen it in the south of England refuse to grow

in nearly every kind of soil and degree of aspect, even with all conceivable coaxings. This is probably owing to climate. It is very impatient of atmospheric drought, as the present season has no doubt proved to all who cultivate it; and the absence of the long bracing nights and refreshing dews of the north is perhaps the cause of the ill success of the endeavours I have seen made of cultivating it in the south. In planting, the roots should be put 6 or 7 inches into the soil, and the planting is best done in February or March; the surface should then be mulched with good old manure, and there should be twigs or some kind of support inserted into the soil for the growths to cling to as soon as they appear above ground. This is of much importance, as it enables the plant to establish itself earlier than it would otherwise do.

PLATYCODON GRANDIFLORUM.

This beautiful blue flowering Campanula-like plant is worthy of more extended cultivation than it at present is allowed. It is a fleshy-rooted plant, with rather erect stems and short terminal racemes of fine large bell-like flowers. About the year 1845, Mr Fortune introduced from the south of China *Platycodon Chinense*, a plant a little more luxuriant than *P. grandiflorum*, but not in any essential feature differing from it, although it is now circulated as a distinct species. Either or both are very choice plants, and worthy a place in any garden; they are autumn-flowering plants. In the north they are by some considered scarcely hardy, but this is a mistake; they withstand the utmost rigour of our winters, but are exceedingly impatient of wet, especially when in the dormant state. There are two varieties of *P. grandiflorum*, now rarely seen, named *Album* and *Album semi-plenum*; the first is very desirable. A little peat in the soil, perfect drainage, and a sunny warm aspect, will lead to success with these plants.

W. S.



LOBELIAS—TALL OR PERENNIAL.

THE tall flowering Lobelias merit a higher place in flower-gardens than is allotted to them at present. They are an elegant class of plants, both in style of growth and in the intense shades of colour; some of the dark-leaved varieties are fine subjects as pot-plants. There are some fifteen or sixteen varieties in cultivation, but in this part of the country there is very little of them seen.

L. cardinalis is very hardy, and, when well grown, makes splendid lines of scarlet in autumn, when geraniums fail to open up. The finest effect we ever saw with this Lobelia was in the "long border"

at Trentham many years ago; and the massive effect of that fine border was never better than when the cardinal flower was a chief plant in it. The cardinal flower is also well suited for situations that are shaded, and where ordinary flowering-plants will not bloom; in such places this *Lobelia* will flower freely, and for a very long time. We think this old Virginian flower is still worthy of what Justice said of it, "An exceedingly beautiful scarlet."

Lobelia fulgens and varieties are still more showy and far more stately in growth than *L. cardinalis*, but are much less hardy, and require more nice treatment in propagation. The hybrid varieties with which we are acquainted are all traceable to the Mexican species, but it is worth the attention of enterprising florists to breed a hardier race from the North American species. In a great number of places flower-gardening must break down if we do not get into a hardier race of ornamental plants. *L. fulgens* is easily managed if once its proper treatment is understood; it is easily injured by being *over-dry*, and in that state cannot be increased by cuttings: of bottom-heat they are very impatient, and we have failed more than once in trying to increase them by that means. All the tall *Lobelias* delight in root-moisture, but do not thrive in a retentive soil. This class of *Lobelias* is naturally found growing near or on the edge of streams and pools, but sub-aquatic treatment is not necessary in our climate. A few fine varieties of the *Fulgens* race may be named as deserving special culture: *L. Victoria*, fine scarlet, with free habit of growth; *L. rubra sanguinea*, scarlet with white eye; *L. Sappho*, crimson shade with white eye; *L. St Clair*, dark scarlet with large fine flowers. A few years ago we got a small plant of the rare *L. syphilitica*, and by misfortune it was destroyed: we would feel much obliged to any one who will put us in the way of getting a plant of the true *L. syphilitica*.

For frame and greenhouse culture the Mexican species and hybrids are first-rate plants, and no common plant will so well repay moderate attention. We have had plants in 12-inch pots 5 feet high, with from 12 to 18 spikes of splendid bloom. For this object good young plants are potted in autumn and wintered in a cold frame. In February the plants are put into a temperature of about 60°, and this treatment of temperature and repotting is carried on till May, when the last shift is given, and the plants placed in a pit or greenhouse. When the leading shoot is grown the height required, it is stopped, and the laterals grow with great rapidity, and flower abundantly in autumn. Bog-mould seems to give a healthy vigour to the *Lobelias*, which is distinctly noticeable when grown in pots. Propagating the tall *Lobelias* is best done in autumn, and the less the shoots are disturbed after being put in the better will be the plants, and more spikes of flower. We observe

that cuttings taken last April are in flower at the 10th August, but only one spike, and this has been a favourable season for such plants.

Plants from seed are far the best to grow for bedding purposes, but it requires rather nice management to get up a crop of seedling *Lobelia fulgens*: the seed, in our practice, comes best sown on the *surface* of old leaf-mould, and just pressed down without any covering, and placed in heat, where the least possible watering will be required until the plants appear fit to handle.

CHAS. M'DONALD.

THE DROUGHT.

THE GARDENS, HANWORTH PARK, HOUNSLOW, W.

A GOOD deal is now being said about the dry weather this summer; no doubt it is extremely felt in many places. Gardeners generally have, no doubt, with difficulty planted out their winter supply of vegetables; in many instances they are still unplanted. What will such gardeners do who have from fifteen to twenty-five people to serve during winter? Let me recommend to all gardeners who require a large supply of winter stuffs, to plant largely the Turnip-rooted Cabbage, or the generic name "Kohl-rabi." This certainly is one of the hardiest of all vegetables, and, when properly cooked, is a most delicious dish. It is done in this way: when sufficiently grown it is sent to the kitchen, where it is dressed, peeled very thin, and cut in thin slices, boiled in salt and water for twenty-five or thirty minutes, according to size. When well boiled it is served up in a vegetable dish. A little melted butter very thin is very good to add to its flavour, and it can be used with boiled mutton and roasted pork; and without melted butter nothing is nicer to roasted beef. Leeks also are very useful in such times, as they can be planted in any deep soil; when a good supply of dung is comeatable, they delight in rich living. It is adverted to, that this has been the driest summer we have had for forty years. Let me here quote an article I copied from the 'Gardeners' Chronicle,' 1842—viz., "A River dried up—ominous Inscription:"—

"The heat of the summer has so dried up the waters of the river Elbe that the water-mills are all at a stand, and near Pirna the river is entirely dry. The waters in retiring have given up a secret kept by them for more than one hundred years. A square stone is left bare, having the following significant inscription in Saxon *patois*: 'When last men saw me, in August 1629, they wept; and they who see me next shall weep too.—September 1842—Germany.'"

The above may be of use as a reference to our worthy readers, to

show that some are mistaken as to the time of the last severe drought. I well remember that many of the farmers had to pull their Oats and Barley instead of reaping in the usual way—the straw being so short. The thermometer here on the 21st (Tuesday) July registered in the shade at one o'clock 98°, and at five P.M. read again 99°, these two being the highest on my list of registers, which are taken morning, noon, and night throughout the year. I may say since 1844 I have filled books with notes on the weather.

JAMES GRANT.



A WEEK'S RUN FROM GARDEN TO GARDEN.

GARDENS nowadays are brought within the reach of every one who wishes to see them. A railway here, a boat there, a cab or 'bus sometimes, and an earnest use of the legs always, are the best means to be used to that end. Money, of course, is wanted, but what is commonly wasted in indulging in tobacco and other excesses will suffice for this in most cases. A run along the North British Railway and we reach Dunbar.

Owing to the long drought and fire, the hedges and banks of the railway are as rusty-looking as old iron itself; and it is an agreeable change when we find ourselves trudging along the high-road leading to Broxmouth Park, with the sea close on our left hand, and hills and cultivated fields on our right. Reaching the gateway, five minutes' walk along a well-curved and well-kept road brings you to the garden and the grasp of Mr Denham's hand. Time will only allow me to note a few of the chief features of this fine well-kept garden, so liberally thrown open to the public on Thursdays by his Grace the Duke of Roxburghe. The extraordinary fine examples of Muscat of Alexandria Grapes in a small lean-to house are really worth going to see. The berries are quite monstrous; they don't keep, however, as well as smaller Grapes, and are not as well flavoured, which is a point worth noting. The excellent crops of Apples on trees trained as espaliers on strained wire around the borders of the kitchen-garden are worthy of note, and the mode of training worthy of adoption. A large lean-to peach-house, with the wall covered with healthy trees, and carrying fine-coloured and well-matured fruit, while the body of the house is filled with an excellent assortment of summer flowering-plants, such as handsome bushes of *Statice profusa*, Japan lilies, and the finer kinds of *Pelargoniums*, is a very fine object. In a large span-roofed house we noticed small autumn-struck plants of *Hydrangea japonica*, carrying immense heads of bloom, 12 inches in diameter—a

very useful decorative plant at this season of the year, and so are the variegated kinds. The flower-garden is situated on sloping ground near the house, and, considering the dry weather, the beds are well filled. Some groups of fine Conifers in a secluded part of the pleasure-grounds are very large and handsome—the *Pinus Douglasii*, 30 feet high, and *Araucaria imbricata*, 20 feet. A large sheet of ornamental water in the park would be greatly improved by altering the straight into a wavy outline; indeed, it could be transformed with a reasonable outlay into a beautiful imitation lake. Artificial water in this country is not so well looked after as on the Continent. In France particularly it is considered the chief attraction on a property, and money is not spared in keeping it clean and wholesome. Situated so near the sea, Evergreens do not do well where exposed to the breeze; but where protected by trees, Laurels and Hollies form fine handsome bushes. Noticeable in the grounds are some very fine trees of *Cedrus Libanus*. We make our exit by a door on the beach, noticing at the same time the dwarfing influence of the sea-breeze on the plantations; and bidding adieu to our friend Mr Denham, we retrace our steps to the Dunbar station, in order to train it to Dirleton station, which is situated in the finest agricultural district in Scotland. A walk of two and a half miles brings me to Archerfield Gardens, famous not only for flower-gardening, but for Grape-growing, Pine-growing, and general first-class gardening—in many instances gardening under difficulties, and yet successful withal. We were agreeably struck with a curious yet exquisite little gem of a plant for edging and divisional lines, namely, *Sempervivum Californicum*. A large circular bed in front of Mr Thomson's house was edged with this. I shall be greatly mistaken if this plant is not in great request this season. *Santolina incana* is another very useful plant, as white as the *Cerastium tomentosum*, and sweet scented. Flower of Spring Geranium is the best variegated Geranium I have seen; and *Chrysanthemum Sensation* makes a first-class bed of variegation when wanted without flowers. At a distance it is not known from Golden chain Geranium. Foliage-plants have been associated with flowering-plants in Archerfield and Dirleton Gardens; for instance, a central bed in the latter garden is planted thus,—a large *Dracaena indivisa* in the middle, and supported by *Coleus Verschaffeltii*, *Centaurea ragusina*, and *Yucca recurva*, and the ground covered with blue *Lobelia* and *Tropæolum Cooperii*: *Echeveria metallica* has a novel appearance. Here, too, we find, well disposed about the garden, Cannas, Wigandias, Ricinus, Ficus, and many others; all these have done exceedingly well, and have considerably enhanced the beauty of the garden. A magnificent line of *Gladiolus Brenchleyensis* along the entire length of the garden

is gorgeous in the extreme. This certainly surpasses all other varieties of this popular flower in effect. Some novel and pleasing arrangements in colouring the beds this year are worth noting: for instance, *Centaurea ragusina* and Dell's Beet, mixed and edged with *Alyssum*; another centred with *Geranium Christine* and edged with *Tropæolum Cooperii*. *Geranium*, Flower of Spring, surrounded with *Verbena Crimson King*—this has a very fine effect; and so has *Verbena venosa* surrounded with *Chrysanthemum Sensation*. The garden altogether has been greatly improved by narrowing the beds, and thereby widening the walks; bare places under trees have been covered with hundreds of Ferns. At Archerfield gardens Mr Thomson showed me a very fine dwarf *Geranium Glow*; this is certainly an effective and brilliant variety, and no doubt will be a prominent object at Dirleton garden. But the most effective flowering-plants in the garden this year are the East Lothian purple and white Stocks. Never before having seen these, I formed no high opinion of Stocks for associating with *Geraniums* and general bedding-plants, but I am now convinced that no garden is perfect without them. The whole of the borders in these fine gardens are perfect in arrangement. Handsome variegated *Yuccas* are dotted down the centre of a mass of *Verbena venosa*, supported at either end with *Dasylyrion glauca*. As terminating objects at either end of the long borders are some fine Palms, *Analias*, *Rhopalus*, and other fine-leaved plants.

As in former years, Archerfield and Dirleton Gardens still retain their notedness in producing everything that is pleasant to the eye and good for food, at least as far as a garden is capable.

H. K.

(To be continued.)



Notices to Correspondents.

[We regret that want of space compels us to postpone several valuable communications.—ED.]

HEATING BY HOT WATER.

SIR,—After reading almost all that has been published for a long period in the leading journals of the gardening world on heating (and certainly a great deal more than need have been written), I am at a loss to know whether hot-water pipes may pass beneath doorways with *safety* and with *economy*, so far as fuel is concerned. I have always avoided this practice, but with inconvenience and expense. If I may do so with safety and without risk, I can now save a great deal of expense and trouble. A reply to this will much oblige me. If you would add a few remarks on the *principles* which effects this, I shall be further obliged, as I honestly confess that I do not see *why* hot water descends by gravitation to rise again. I am told by practical gardeners that nevertheless it is so. BELERIUM.

[To give a proper reply to your inquiry would require drawings, which we cannot at present give. Hot water does not descend by gravitation to rise again; it only does so by compulsion. This compulsion may be of different characters: for instance, if the point at which the return-pipe enters the boiler is lower than the lowest point that the pipe passing beneath the door descends to is, then circulation will go on; but if the case is reversed, the water will not circulate properly. We hope to return to this subject when time and space permit.—Ed.]

ECHEVERREA METALLICA.

I was very much struck with the beautiful mauve colour of this plant at Battersea last year. I was so fortunate as to procure six strong plants then. These I have planted this year on a terrace exposed to the wind, which in this district (West Cornwall) is often high, coming as it does untempered from the Atlantic. Two of the plants are in the bed out of pots, and are coming into flower; the other four are in beds in pots. They are not nearly so dark-coloured as they were at Battersea, being now of a dirty-greenish mauve. Can you inform me whether this is the ordinary condition of this plant? or does it require any particular treatment to insure its becoming mauve-coloured? The temperature here is more equable than at Battersea—far below London in summer, and much higher in winter.

BELETRIUM.

[We have this plant bedded out here, and its colour is beautiful. It is growing in the pots, which are plunged in the soil, and we never gave it a drop of water during the severe drought we have just passed through. Along with it in the same bed we have *Stapelias*, *Aloes*, *Yuccas*, and similar succulents, and a most interesting bed they make. We look forward to the day as being very near when this class of plants will enter largely into flower-garden decoration. We see no reason why your plants should not be as fine-coloured as those at Battersea Park.—Ed.]

A CONSTANT READER.—*Iris* *Herbstii* should be struck now, and kept in store-pots in a warm greenhouse through the winter; potted off in March in a little heat, and not planted out till the middle of June. This plant requires rich soil and plenty of water. It will not winter in a cold greenhouse—an intermediate house suits it best.

D. H.—Mr Pettigrew's articles on Bees ran through a great many numbers of the 'Scottish Gardener;' they are now out of print, but we believe it is Mr Pettigrew's intention to give the public the benefit of his great practical knowledge of Bee-keeping in a more concise form ere long.

A CONSTANT READER, Hawick.—Build a brick pit in the centre of your house, and cover it with *Arbroath* or *Caithness* pavement, and lay 4 inches of fine gravel over the pavement, and set your plants on the gravel. You can have a couple of pipes in this pit for bottom-heat, and a row of fine white bricks set in Portland cement all round, to keep the gravel from falling off. Round the fronts of the house have slate shelves fixed on iron supports. It is not desirable to have any part of the stages or shelves of a moist stone formed of wood, as such soon decays.

A.—If you leave your *Acacias* out-doors all winter you will lose them. If you have not a greenhouse wherein to place them for the winter, put them in a spare room of your dwelling-house, and keep them moderately supplied with water till you can set them out next year in May.

C. L. R.—The state of the leaves you sent us is caused by Thrip, which is an insect that is not easily destroyed. Syringe with water in which there is a gill of tobacco-water to the gallon, or, if practicable, syringe the leaves with tepid water in which tobacco-water is mixed to the strength given; but we fear your plants are too far gone for any remedy till they shed their foliage, when they should be thoroughly washed with soft soap and water, with the proportion given of tobacco-water.

THE GARDENER.

OCTOBER 1868.

THE ROSE.

(Continued from page 370.)

CHAPTER III.



HAVING proved, as I hope, that there is no royal road, no golden key, to an excellent Rose-garden, but that a poor man, on the contrary, who *loves* the flower, may walk about in March with a bloom in his coat—while Dives, who only *likes*, may be Roseless under all his vitreous domes,—I will proceed now to instruct those who, having this love, desire instruction in the lessons which a long and happy experience has taught to me.

And yet, before I commence my lecture, I would fain enlarge the number of disciples : I would multiply the competitors by exhibiting the prizes, and would so extol the charms of our Queen of Beauty, that all brave knights, gallantly armed, should leap upon their steeds for the lists. In more homely and modern metaphor, I would exhibit to him whom I propose to make a fisherman, his fish. I would take him, as it were, to the broad rivers, from which silvery salmon leap, or peep with him stealthily through brookside bushes at the dark, still, 3-lb. trout. Then, when his eyes glisten and his fingers itch for a rod, I would teach him how to throw and spin ; and would say to him, as old Izaak said, “I am like to have a towardly scholar of you. I now see that with advice and practice you will make an angler in a short time. *Have but a love of it, and I'll warrant you.*”

I will essay, therefore, while I enumerate and extol the special charms of the Rose, to convince all florists *why*, before I proceed to

demonstrate *how*, they should admire and honour pre-eminently the Queen of Flowers.

First of all, because she is Queen. There is not in her realm a single Fenian, but her monarchy is the most absolute, and her throne the most ancient and the most secure of all, because founded in her people's hearts. Her supremacy has been acknowledged, like Truth itself, *semper, ubique, ab omnibus*—always, everywhere, by all.

1. *Semper*.—When, in sacred history, a chief prophet of the Older Covenant foretold the grace and glory which were to be revealed by the New—when Isaiah would select, and was inspired to select, the most beautiful image by which to tell mankind of their exodus from the Law to the Gospel, slavery to freedom, fear to love—these were the words which came to him from heaven, “The wilderness shall blossom as a Rose.” In the Song of Songs the Church compares herself unto “the Rose of Sharon;” and in the apocryphal scriptures the son of Sirach likens wisdom to a Rose-plant in Jericho, and holiness to a Rose growing by the brook of the field. And the Rose still blooms on that sacred soil, even in that garden of Gethsemane, where He, who gives joy and life to all, was sorrowful even unto death. In our own, as in the older time, it is associated with religion, with acts and thoughts of holiness which should be fair and pure and fragrant as itself; and at the Orphanage of Beyrout, the authoress of ‘Cradle Lands’ saw two hundred and fifty maidens receive their first communion with wreaths of white Roses on their heads.

Passing from sacred to secular records, shall I take down my Greek Lexicons, Donnegan the fat and Hederic the slim, my Dictionaries, Indices, and Gradus ad Parnassum? Shall I look out *ῥόδον* and *rosa*, collect a few quotations, dress up a few incidents, and then try to convince my readers that I know every word which classic authors have written anent the Rose? Shall I, having just discovered some sentence bearing on my theme, and having hardly translated it (lame and broken-winded is the Pegasus now, which once cantered in Oxford riding-schools, and jumped with a mighty effort, and a wily tutor whipping behind, the statutory bars)—shall I proudly display my electro-plate, and commence magniloquent passages with—“the educated reader will of course remember,” and “every schoolboy knows”? No, I promised to write *sans étude*, and therefore *sans* humbug also; and it will suffice to say, without dictionaries or high-falutination, that the classical writers, from Homer to Horace, extol above all other flowers the Rose. To the fairest of their goddesses, to Venus, they dedicated this the fairest of their flowers; and the highest praise which they could offer to beauty, was to assert its resemblance to the Rose. Aurora had rosy fingers; I always thought of her at school,

and envied her, as of one who had been among the Strawberries; and beautiful Helen, with whom the world was in love (there must generally have been between forty and fifty distinguished princes, with Ulysses, who ought to have known better, at their head, loafing about the mansion of Papa Tyndarus)—Helen, fair and frail, *rosa mundi, non rosa munda*, had, we are told, cheeks like a Rose, though not perhaps a blush one. Other belles of the past had—so Anacreon, Theocritus, and the poets generally, inform us—rosy arms, rosy necks, rosy feet, and—delicacy forbids me to translate *ροδοκολπο*; and *ροδοπυγες*. “Burning Sappho”—it would have been more gentlemanly, I think, if Byron had called her gushing—crowned the Rose Queen of Flowers; and her readers crowned themselves with the Rose (one can’t help wondering whether the nimble earwig ever ran down their Grecian noses), and vied with each other at their banquets, *ἐκπληττειν τοὺς βρουνους*, to astonish the Browns, with Roses. Cleopatra, according to Athenæus, had the floor covered with them $1\frac{1}{2}$ feet in thickness; and Nero is said to have expended nearly £30,000 upon Roses at one feast,—a nice little order for his nurseryman!

Rome, succeeding Greece in greatness, copying its customs, and lighting her Roman candles from Greek fire, showed an equal fondness for the Rose. Romans of wealth and Romans of taste were as anxious as Horace,

“*Heu desint epulis rosæ;*”

and when the Rose-trees of Pæstum had finished their autumnal bloom,* they were succeeded by flowers artificially produced by means of hot water.

Such are my slender memories of classical allusion to the Rose; but I do not lament this scantiness, because “I have no opinion,” as Mr Lillyvick remarked concerning the French language, of Greek or Roman floriculture. It was the only art in which they did not excel. We know nothing of Greek gardening, and that which we know of Roman is a disappointment. The arrangement was formal and monotonous. They had “come to build stately, but not to garden finely:” and upon terraces and under colonnades, around bath-rooms and statue-groups, they placed horrible mutilations of evergreen shrubs, hacked by a diabolical process, which they called the *Ars Topiaria*, into figures of fishes and beasts and fowls, such as our own forefathers once rejoiced in under the system of gardening surnamed the Dutch. The Roman gardener was actually called *Topiarius*; and this

* Doubts have arisen whether the Roses of Pæstum bloomed twice in the year, as Virgil and Ovid state. The second efflorescence may have taken place in the glowing fancy of the poet, as now with so many of our Hybrid Perpetuals in the imagination of our French friends.

terrible tree-barber went proudly round his arboric menagerie with his trenchant shears, pointing snouts, docking tails, and gaily disfiguring the face of nature with the pleased demeanour of some cheerful savage cleverly tattooing his dearest friend. "But I, for my part," writes Lord Bacon, "do not like to see images cut out in Junipers and other garden-stuff: they be for children."

It is, however, enough to have shown that although the floral light of these Greeks and Romans was dim and feeble, it revealed to them the supreme beauty of the Rose; and we shall find, as we pass down the highways of history from their times to our own, that against the Royal Supremacy no voice has been ever raised. It has been reverently acknowledged always; but its great champions and laureates have been found, of course, among the poets—among those who love beauty most, and in whose hearts a love of the beautiful sings the "manifold soft chimes" of song. In all lands and languages they have sung the Rose, and in none with sweeter service than our own. From Spenser to Tennyson there is no great English chorister who has not loved and lauded her. I have pages of extracts in my commonplace book, but they are, I doubt not, familiar to most of my readers, and the assertion which I have made asks no further proof. The excellent beauty of the Rose has not only been appreciated in all times (*semper*), but in all climes.

2. *Ubique*.*—Born in the East, it has been diffused, like the sunlight, over all the world. It is found in every quarter of the globe,—on glaciers, in deserts, on mountains, in marshes, in forests, in valleys, and on plains. The Esquimaux, as Boitard tells us in his interesting 'Monographie de la Rose,' adorn their hair and their raiment of deer and seal skin with the beautiful blossoms of the *Rosa nitida*, which grows abundantly under their stunted shrubs. The creoles of Georgia twine the white flowers of *Rosa lævigata* among their sable locks, plucking them from the lower branches of climbing plants, which attach themselves to the garden-trees of the forest, and bloom profusely on their boles and boughs. The parched shores of the Gulf of Bengal are covered during the spring with a beautiful white Rose, and also in China and Nepaul; while in vast thickets of the beautiful *Rosa sempervirens* (a native also of China) the tigers of Bengal and the crocodiles of the Ganges are known to lie in wait for their prey.

* I cannot write this word without recording an anecdote which has not, I believe, been published, but which well deserves to be. It was told to me by an artillery officer, that a gentleman, dining at the mess, Woolwich, mistook the Latin trisyllable *Ubique* on the regimental plate for a French dissyllable, and delighted the company by exclaiming, "Ubique! where's Ubique?—never heard of that battle!"

The north-west of Asia, which has been called the fatherland of the Rose, introduces to our notice the *Rosa centifolia*, the most esteemed and renowned of all, with which the fair Georgians and Circassians enhance their fairness. And yet in the coldest regions—for nature is ever bountiful as beautiful, and that merciful Power which makes the wheat to grow everywhere for our food, sends also for our delectation things pleasant to the eye—in Iceland (I wish to confess honourably that I am still priggish from Boitard), so infertile in vegetation that in some parts the natives are compelled to feed their horses, sheep, and oxen on dried fish, we find the *Rosa rubiginosa*, with its pale, solitary, cup-shaped flowers; and in Lapland, blooming almost under the snows of that severe climate, the natives, seeking mosses and lichens for their reindeer, find the *Rosas majalis* and *rubella*, the former of which, brilliant in colour and of a sweet perfume, enlivens the dreariness of Norway, Denmark, and Sweden.

And I come home now, eagerly as a carrier-pigeon to his native dovecot, to our own Rose-gardens—eagerly, because here, and here only, can our Queen be found in the full splendour of her royal beauty. The Roses of all lands are here, but so changed, so strengthened by climate, diet, and care, so refined by intermarriage with other noble families, that they would no more be recognised by their kinsfolk at home than Cinderella at the ball by her sisters. The fairy Cultivator has touched them with her wand, and the pale puny kitchen-girl steps out of her dingy gingham a princess, in velvet and precious *point*, like some glowing butterfly from his drab cocoon, or as when, at the Circus, “Paddy from Cork” drops suddenly his broken hat, his slit coat, coarse breeks and brogues, and lo! it is “Winged Mercury.” They came, as ambassadors to the Queen’s court, savages, “with nothing on but their nudity,” their luggage a peacock’s plume, and now they move with a majestic dignity in gorgeous yet graceful robes.

Will you accompany me, my reader, to one of Queen Rosa’s levees? They differ in some points from Queen Victoria’s—as, for example, in these: that the best time to attend them is at sunrise; that you may go to them with dressing-gown and slippers, or with shooting-coat and short pipe; that the whole court will smile upon you according to your loyalty, not according to your looks or your income; and that all the beauty which you see will be real—(“Madame Rachel,” nevertheless, is generally present, in my garden always, and a very pretty Tea-scented Rose she is)—no false foliage, no somebody-else’s ringlets, no rouge, no pastes, no powders, no perfumes but their own.

Enter, then, the Rose-garden when the first sunshine sparkles in the

dew, and enjoy with thankful happiness one of the loveliest scenes of earth. What a diversity, and yet what a harmony, of colour! There are White Roses, Blush Roses, Pink Roses, Rose Roses, Carmine Roses, Crimson Roses, Scarlet Roses, Vermilion Roses, Maroon Roses, Purple Roses, Roses almost black, and Roses of a glowing gold. What a diversity, and yet what a harmony, of outline! Dwarf Roses and Climbing Roses, Roses that droop to earth like fountains, and Roses that stretch out their branches upwards as though they would kiss the sun; Roses "in shape no bigger than an agate-stone on the fore-finger of an alderman," and Roses 4 inches across; Roses in clusters, and Roses blooming singly; Roses in bud, in their glory, decline, and fall. And yet all these glowing tints not only combine, but educe and enhance each the other's glory. All these variations of individual form and general outline blend with a mutual grace. And over all this perfect unity what a freshness, fragrance, purity, splendour! They blush, they gleam, amid their glossy leaves, and

"Never sure, since high in Paradise,
By the four rivers, the first Roses blew,"

hath eye seen fairer sight. Linnæus wept when he came suddenly upon a wide expanse of golden furze; and he is no true florist who has never felt the springs of his heart troubled, surging, overflowing, as he looked on such a scene of beauty as that which I so feebly describe. Such visions seem at first too bright, too dazzling, for our weakly sight; we are awed, and we shrink to feel ourselves in a Divine presence; the spirit is oppressed by a happiness which it is unworthy, unable to apprehend, and it finds relief in tears. It is such a feeling as one has, hearing for the first time the Hallelujah Chorus sung by a thousand voices, or seeing from "clear placid Leman" the sunlight on Mont Blanc. "It is too wonderful and excellent for me," we say; "it is more like heaven than earth." Or, with Milton, we ask in reverent wonder,

"What if earth
Be but the shadow of heaven, and things herein
Each to each other like, more than on earth is thought?"

and our prayers go up, as the incense from the Rose, for purer eyes and hearts.

We have nothing in the whole range of floriculture so completely charming as a Rosary in "the time of Roses." A grower of most flowers, and a lover of all, I know of none which can compete with the Rose for colour, form, and fragrance, jointly, whether *en masse* or in single blooms. "Orchids," do I hear? Well, I have stood before *Lælia purpurata* in an ecstasy of admiration, until, the flower-

show being crowded, the police have requested me to move on. Not long ago I lost half my dinner because my eyes would wander from my plate to a *Lycaste Skinneri* some distance up the table ; and I appreciate generally with a fond delight the delicacy, the refinement, the brilliancy of this lovely class. It is the aristocracy, but *not the queen* of the flowers. Regarding the two collectively, there is never to be seen in the orchid-house the simultaneous splendour of the *Rosary* in July—the abundant glistening foliage, the sweet perfume ; and comparing the individual flowers, which would a lover take to his beloved—which would his darling, herself

“ A Rosebud, set with little wilful thorns,
And sweet as English air can make her,”

osculate and pet the most ?

And the stove, truly, is a gladness and refreshment—gay when all without is bleak and dismal with the golden *Allamandas*, the rosy *Dipladenia*, so truthfully termed *amabilis*, the bridal *Stephanotis*, the gorgeous *Amaryllids*, the *Bouganvilleas*, *Francisceas*, &c. ; but what will you find there like the Rose ? Place *Maréchal Niel* by the *Allamanda*, *Louise Peyrounay* by the *Dipladenia*, a truss of *Madame Bravy* by the *Stephanotis*, *Charles Lefebvre* by the *Amaryllis*, and, like fair maids of honour and beautiful ladies-in-waiting, these inmates of the hothouse must bow before their queen.

It is the same in the conservatory. The *Camellia* is of faultless form, but it has not the grace, the ease, the *expression* of the Rose. It is like a face whereof every feature is perfect, but which lacks the changing charms of feeling and intellect. Neither has it the colours nor the scent. So with all other greenhouse favourites : they are lovely—*Azaleas*, *Pelargoniums*, *Ericas*—but not so lovely as the Rose.

It is the same out of doors as under glass. The gardens of Bagshot, where nightingales sing, and *Rhododendrons*, *Azaleas*, and *Kalmias* bloom—the goodly tents of *Waterer* in the park of the Regent and in the gardens of Kensington,—are sights to make an old man young ; but they show not to our eyes the brightness, the diversity of the Rose's hues, and for our noses they have nothing. The golden tints of *Persian Yellow* and *Celine Forestier*, the glowing scarlet of *Senateur Vaisse* and *Duc de Rohan*, the odour of *Devoniensis*, we may look for and sniff for in vain.

Glorious, too, are the *Dahlias* of Slough and Salisbury, of every hue, and in symmetry almost too severely perfect ; and yet let their owners, than whom two more earnest and successful florists never tended flowers—let *Charles Turner* and *John Keynes* declare, as I know they

would, that though the Dahlia may be "Queen of Autumn," the Rose is the Queen of Flowers.

Yes, the late, proud, stately, handsome Hollyhocks of Chater, of W. Paul, and of Hawke, must bow their high heads to the Rose. Not even in combination and alliance can all the flowers of the garden compete with the garden of Roses—not the flowers of spring, or the terraces of Cliveden, or Belvoir's sunny slopes, not the summer splendours of Archerfield and beautiful Hardwicke. Let the artistic "bedder-out" select his colours from all the tribes and families of plants: his blacks and bronzes, and dark deep reds, from the Coleus, the Oxalis, Amaranthus, and Iresine; his yellows from the Calceolaria, Marigold, Tropæolum, Viola; his scarlets from the Verbena and Pelargonium; his whites from the Cerastium, Centaurea, Santolina, Alyssum; let him have all that flower and foliage, arranged by consummate taste, can do, he can never produce a scene so fair, because he can never produce a scene so natural, as he may have in a garden of Roses. It will be more brilliant, more imposing, but there will not be that unity, that perfect peace, of which the eye wearies never. It is a grand march of organs, trumpets, and shawms, but the ear cannot listen to it so long, so happily, as to some plaintive horn in the calm eventide, or some sweet simple song.

And the Rose, as it is admired, so may it be grown by all.

3. *Ab omnibus*.—As it is loved by all grades and ages, from the little village child who wreathes it from the hedgerow in his sister's hair, to the princess who holds it in her gemmed *bouquetier*, so it may be alike enjoyed in the labourer's garden or in the conservatory of the peer. The best Cloth-of-Gold I ever saw was on a cottager's wall; and wherever it is loved, there will it display its beauty. It is adapted for every position, and for every pocket too. The poorest may get his own briers, and beg a few buds from the rich; and men of moderate means may make or maintain a Rosary at a very moderate expense. They may lay the foundation for a £5-note; and then, by budding from their own trees, and by an annual selection of a few additional and valuable varieties, may in two or three seasons possess a beautiful Rosarium.

I will now endeavour to tell, practically and minutely, how this may be done.

S. REYNOLDS HOLE



TO THE EDITOR OF THE 'GARDENER.'

After perusing the very interesting papers by the Rev. Mr Hole, which have appeared in the 'Gardener' on the "Rose," it has occurred to me that some hitherto unpublished lines on "The Incense of Flowers," by the poet R. Leighton, might form a good appendage for the benefit of your readers. I have the consent of the poet, and enclose you a copy of his poem.

Mrs A., of Liverpool.

September 11, 1868.

THE INCENSE OF FLOWERS.

THIS rich abundance of the Rose, its breath,
On which I almost think my soul could live—
This sweet ambrosia which even in death
Its leaves hold on to give,—
Whence is it? From dank earth or scentless air?
Or from the inner sanctuaries of heaven?
We prove the branch, the root—no incense there!
O God! whence is it given?
Is it the essence of the morning dew,
Or distillation of a purer sphere—
The breath of the immortals coming through
To us immortals here?
Exquisite mystery! my heart devours
The living inspiration, and I know
Sweet revelations with the breath of flowers
Into our beings flow.

ROBERT LEIGHTON.

NOTES DURING A ROUNDABOUT TOUR.

PERMIT me to be your roving correspondent during these holiday times, and in such a character to record some impressions picked up in my journeyings, the publication of which may have an interest for many of the readers of the 'Gardener.'

The last week in July found me at Banbury acting as one of the censors at the horticultural show held there every summer. It is a clean, thriving, healthy town, famous for its cakes, its cross, and its fine old church. The horticultural show at Banbury is a fair example of the highly successful horticultural exhibitions held in some of the provincial towns during the summer months. The chief features are,

however, the fruit and vegetables, which are always numerous and of very fine quality. The show is held in the pretty grounds of William Munton, Esq., the Treasurer of the Banbury Horticultural Society—a charming place, having a small but nicely-arranged and bright-looking flower-garden. Some beds of a crimson *Petunia*, edged with *Centaurea candidissima* and other silver-foliaged plants, were particularly attractive, and among the best I have seen this summer. Two special features at the Banbury show are the Onions and the Celery. This part of Oxfordshire is an onion-growing district, as it possesses a fine, deep, dark loam, every way suitable to the production of fine examples of this esculent. The show of Onions in the classes set apart for them among the vegetables in the schedule of prizes is something remarkable, both in the extent of the subjects competing, and in regard to their superlative quality. But in addition there is held every year a fierce Onion contest in the form of an Onion sweepstakes, and fourteen prizes are given from a fund subscribed for the purpose to the best twelve Onions. This is an extra feature of the show, and causes considerable excitement in Banbury and its neighbourhood. Those who officiate as judges at the show make the awards in the Onion sweepstakes also, and a long and patient task it is. At the show in August last, some twenty-one exhibitors competed, and each collection of tubers really deserved a prize. The value of the highest prize is £3—the lowest, five shillings. The visitor who looks upon these fine Onions for the first time is struck with wonder at their unwonted size, but then they are specially cultivated for exhibition purposes. Much of a kindred enthusiasm to that some of the old florists were wont to expend on their pets, such as the Tulip, Auricula, Polyanthus, &c., is inherited by these Oxfordshire growers of the Onion, and they are tended daily with a kind of paternal care. A very successful grower and exhibitor of the Onion has furnished me with his method of cultivating the Onion, and I give it in his own words:—

“The writer of the following short article on the cultivation of the true white Spanish Onion, has been very successful in growing this most useful bulb for the last seven or eight years. Cultivating mostly for horticultural shows, he has, however, perhaps bestowed more labour on it than an ordinary amateur gardener would consider necessary for ‘home’ use. He has always found that the best situation for an Onion-bed is the most open space in the garden; and he has repeatedly, for five years in succession, grown Onions on the same piece of ground, plenty of air and sun being extremely necessary, as the plant is very susceptible of blight, mildew, &c., at particular periods of the season. Having selected the spot of ground, let it be well double-dug and trenched as roughly as possible in the autumn. In doing this, be careful to remove all large stones, &c., that may be brought to the surface in throwing up what is called ‘hungry soil.’ At about Christmas-time, when a moderate amount of frost sets in, begin to manure the ground with the following proportions of rotten dung—viz., three-sixths pig, one-

sixth cow, one-sixth horse manure, and one-sixth road-dirt, adding to the whole about 20 lb. of common salt, and mixing all well together; spread this compost about 5 or 6 inches thick on the ground. On cold stiff soil the road-dirt may be dispensed with, and the same quantity of rotten horse-manure used instead. Let this lie till some time about the end of January, at which time well dig the ground again, and a second time pick out all large stones, removing those on the surface carefully with a rake.

In about a fortnight afterwards—say about the middle of February—the seed should be sown, selecting the latter part of the first fine day for the operation, when the ground is pretty dry. In choosing seed, be careful to procure the true White Spanish. For finally preparing the ground, give it a thin layer of a mixture of burnt garden-ashes, a few pounds of Peruvian guano, and some rotten manure, the whole having previously passed through a sieve. Rake the ground evenly all over. Draw drill-lines from end to end about three-quarters of an inch deep, and ten or eleven inches apart, and thinly deposit the seed. Cover over with the back of a rake, and let it remain about eight days. Then on a fine afternoon, when the ground is pretty dry, well tread the bed all over, and, with the back of a spade, beat it evenly. Some time towards the end of April, when the Onion is 4 or 5 inches high, go carefully over the bed with a small flat trowel in one hand, and press down close to the Onion all holes that may have been made by worms. In about ten days' time begin to single out the Onions to about an inch or so apart; in doing this, however, be careful not to disturb those which are to stand. Use a knife for this purpose, and do not raise the earth, but cut the roots off close to the bulb. In this way the fibres of those intended to stand are not broken. From this time, for a month or so, hand-weed and gradually again thin the bed, till the Onions stand 7, 8, or 10 inches apart. Then give it another layer of about half an inch of burnt ashes, a few pounds of guano, and dry sifted rotten manure evenly all over the bed, close to the Onions. Towards midsummer, when the plants have begun to throw out good-sized bulbs, if the weather should continue dry, watering will be necessary. This should be done in the evening, with a very fine rose on the watering-pot, giving the bed a thorough soaking. The rose for this purpose should be made of copper, as when of this material the holes may be drilled to any size. From this time great care should be taken in moving over the bed not to bruise the tops of the plants. When they have attained a good size—say about July—liquid manure may be beneficially used on the bed previously to watering it; in this operation, however, be careful not to let the liquid touch the bulb; on the contrary, pour it between the rows with a small watering-pot without a rose. Occasionally, as the bed becomes somewhat hard on the surface from watering, slightly stir and level the soil with a trowel or small hand-hoe. Continue to water and to apply liquid manure till the crop is ripe and fit to be harvested in September."

Early sowing is thus seen to be one great requisite in getting fine Onions for exhibition; and it is the size of the bulbs that excites the wonder of those who are accustomed to sow their Onions at the end of March, and who, because their bulbs do not come nearly so fine, are of opinion that the Oxfordshire Onions are sown the previous autumn.

But there is one process the writer of the above article fails to mention—that of pinching the neck of the bulb when it has something more than half formed its size. This is done to throw all the strength

of the plant into the formation of the bulb, while it also kills the foliage, as it were, and so gives a fine neck to the Onions when the bulbs are fully manured. One thing is quite certain, that these Banbury Onion shows teach conclusively that gardeners generally do not make so much of their Onion crops as could be done were their culture to receive closer attention.

Celery is well done at the Banbury show also ; and in order to produce it fine, it is customary to place a narrow drain-pipe by the side of each stem, reaching to the root, and by this means copious supplies of liquid manure are given to each plant. Not only are fine stocks of Celery produced, but the quality also is of a very high order.

The way in which the judges are treated at Banbury contrasts very favourably with the practice of some other societies. Sometimes it appears to be the custom to regard the judges as a kind of necessary evil, to be borne with for a day with as good a grace as possible. Occasionally, when they present themselves on the ground, they are received with a kind of haughty condescension by a somewhat aristocratic hon. secretary, and by him are handed over to the tender mercies of some lesser light, to conduct them to the work they are summoned to undertake ; and then the luncheon after—often in a small and confined tent, with hard planks for seats, with the inevitable tough fowls, parboiled ham, and execrable sherry, gracing the festive board. Why is this wretched fiery compound provided, when a much superior wine, in the form of a cool and pleasant claret, could be had at a cheaper rate ?

At Banbury an excellent luncheon is spread in one of the rooms—always a delightfully cool one—of the residence of the Treasurer, Mr Munton. It is thorough enjoyment to repair here after the fatigues of the day ; and I hope at some future day to meet here, as I did during August, Messrs Turner and Edmunds, the judges, to drink to the further success of the Banbury Horticultural Society. R. D.

(To be continued.)

NOTES ON HARDY HERBACEOUS PLANTS.

CALAMINTHA GRANDIFLORA.

THIS fine old inhabitant of gardens is known also by the name *Melissa grandiflora*. It is a native of Italy and other parts of the south of Europe. Its low neat habit of growth and dressy aspect when in flower, renders it worthy of more extended cultivation. The whole plant when in flower reaches the height of about 10

or 12 inches, and the flowers are produced in terminal, loose, graceful spikes or racemes, and are reddish or light purple. Where cut flowers are required in large quantity and variety, this little plant should have a good place and generous treatment; it will amply repay any trouble bestowed on it with the profusion of its flowers, and long continuance of its flowering period. Under favourable circumstances it may be had in flower from early June till late September, and even later in mild autumns. It might be drafted into the ranks of *bedding-plants* with some advantage to those whose means and appliances are inadequate to the raising of annual supplies of the more tender kinds. The plant is one of the simplest to cultivate, and adapts itself to almost any kind of soil or situation. The genus *Calamintha* is a pretty considerable one, and a few have been introduced and discarded again, some as quite unworthy of cultivation, while the above and the *C. caroliniana* have been retained and fostered by those whose tastes or means have deterred them from following the modern fashion of flower-gardening. But *C. caroliniana* is inferior to *C. grandiflora*, particularly in the duration and profusion of its flowers.

MELITTIS MELISSOPHYLLUM.

This pretty and interesting plant is indigenous to Britain, being found wild in a few places in the south and south-western parts of England. It belongs to the Labiate family, and is the sole representative of the genus; there is no other known species of *Melittis*. The plant reaches the height of 1 foot or 18 inches, and is erect and dense in habit, with many simple stems. The flowers are borne in whorls in the axils of the leaves on the upper part of the stems, and present the appearance of a dense terminal spike. The calyx is the most prominent feature in the plant; it is creamy white, thin, almost membranous, unusually large for a Labiate, and is much inflated or nearly bell-shaped. The corolla, about an inch in length, projects only a little beyond the calyx, falling over it with the broad lower lips, and is pink, purple, or variegated, white and pink, or white and purple, in the few varieties of this plant that have been observed. There are two well-marked and permanent varieties of this pretty plant: one is named *Alpina*, and is found upon the Swiss Alps, and is distinguished by more dwarf growth; the other is named *Grandiflora*, the flowers of which, as the name implies, are larger than in the type. Not any of the forms may be pronounced showy, they are simply chaste and pretty. It flowers in long duration throughout the earlier part of summer, and is for a long period trim, dressy, and pleasing. It is easy of cultivation, delights in partial shade, and is consequently well adapted for introducing into open woods, and suchlike places, where

it may be desirable to introduce characteristic plants. It is beautiful in the mixed herbaceous border or rockery, and is very accommodating as regards soil, any common moist garden-soil suiting admirably.

W. S.



NOTES ON BERKELEY CASTLE AND GARDENS.

THIS ancient and time-worn building is the country residence of Lord Fitzharding, is a place associated with many curious incidents and tragical events, and contains an abundance of food to feed the appetite of the antiquarian. The castle is a prominent object; it stands upon a piece of table-land in the middle of a valley several miles wide, but is hidden to some extent by lofty trees.

The surrounding neighbourhood is probably as beautiful as any in England; only let the sight-seeker ascend to the brow of the Cotswold Hills, where a view opens upon him difficult for language to describe. Lying at his feet is the vale of Berkeley, on the opposite side is the forest of Dean, covering thousands of acres, yielding also an immense amount of mineral wealth. The river Severn, some miles wide, skirts the bottom of the hills, studded with ships pushing along under the power of wind and steam on their commercial errand to Gloucester and adjoining depots. The town of Berkeley abuts on the castle, a necessary arrangement during feudal times, to keep the retainers of their liege lord within bugle-sound, in case of an invasion by the enemy, or to enable him on the shortest notice to attack some hostile neighbour.

This is a place of little importance, and supported by the wants of the castle and the adjoining county, which is purely agricultural. Its history is enveloped in some obscurity, but enough is known to fix its date anterior to the Conquest. So slow has been the increase of population, that at the last census the inhabitants did not exceed 1012.

The streets are irregular and for the most part narrow; all traces of antiquity have been destroyed; the houses have been refronted and otherwise altered, so that a stranger would not observe any difference between the buildings and that of a country village of the last century. There is, however, one house, although of modern date and of modest exterior, in which first breathed the benefactor of his race, deserving special notice and claiming our special regard, which is Chantry Cottage, the birthplace of Dr Jenner, the discoverer of vaccination. What a state of ignorance prevailed then! By some the discovery was treated with ridicule, and by the majority of persons with absolute contempt. Will it in this age be believed that to such an extent had prejudice darkened the nation, that the prophetic parts of Scripture were so ex-

plained as to prove that vaccination was no other than the veritable Antichrist? But the fury of opposition has now become extinguished, misconception has disappeared, and the benefits which this discovery has conferred upon mankind render the name of Dr Jenner immortal.

Just before entering the archway that leads into the castle court, a Chinese bell is suspended on iron supports. Do not suppose it is a hand-bell, as it weighs 27 cwt. ! The outer surface is panelled, and in each is written an inscription in Chinese hieroglyphics, which I suppose no one expects one to translate. This rare curiosity was taken from the ruins of a Buddhist temple at Isekee, and was presented by a friend to the late Lord Fitzharding.

Berkeley Castle was founded about the year 1121, and is one of the few that survive that period in a state of perfect preservation. The form of the building is nearly circular, and encloses an irregular courtyard, and was at one time surrounded by a moat, which is now planted, and forms part of the pleasure-ground.

To record all that is worthy of notice would occupy more space than the Editor would willingly grant, so I shall only discuss a few leading particulars, merely to show what constitute the principal characters of the interior.

The chapel still bears the insignia of all that characterised the darkest days of Romanism, but now is only used for the conducting of family prayers. The roof is supported by corbels, which are still in an excellent state of preservation, although as old as the reign of Edward III. On the altar still stands a small marble relievo of a Roman sacrifice, retained merely as a mark of antiquity.

The baronial hall, of large dimensions, is now used as a dining-room, decorated by swords, figures in ancient armour, crossbows, matchlocks, and numerous flags suspended from the roof, carried off from the battle-field. Among them I observed one taken by one of the lords of Berkeley at Culloden, and kept as a trophy. At the instigation of his wife and her paramour, perished within these walls Edward II. The room in which the deed was perpetrated is pointed out to visitors, the instrument of torture, and the bed on which he slept. Being a fortified castle, provision was made for the protection of the females during the time of danger. The place of retirement is called the Lady's Hold, consisting of chamber above chamber, with an outlet to the roof, which was used as a promenade during their confinement, and sometimes set aside as the abode of state prisoners. But for the criminals or those of the enemy, the dungeon was assigned them as a place of security, from which there was no possibility of escape, and into which I had no desire to enter.

The church is a handsome building, in the early English style

of architecture, consisting of a nave, two aisles, and chancel. Till lately there was preserved on the front gallery a painting of St Cecilia, who, tradition affirms, lived in 225, and was so skilful a musician and sang so sweetly that she was visited by angels from the mansions of the blessed; an invention, no doubt, got up for party purposes, to amaze and deceive the credulous. There is the effigy of a lady wearing a most extraordinary head-dress, both in shape and size, the head resting on a cushion supported by an angel; above all she wears a mantle, and under it a super-tunic surmounted by a corset, a dress common towards the end of the fourteenth century. The last that I shall name is that on the ceiling of the antechapel—the figure of a female saint, hovering over her the emblem of the Holy Spirit, a monkey holding a bottle, a fox preaching to geese, a mermaid with looking-glass and comb. On one of the pillars is the figure of the devil on horseback carrying off a witch, who had previously sold herself to his sable majesty.

There are numerous tablets on the walls, containing interesting memorials of men who have left behind them a name in history by their heroic deeds; others, again, who have soothed the suffering of humanity by a skilful application of science.

The bell-tower stands at 150 yards from the church, a square massive building, 76 feet high, with open turrets and battlements. Bells were first used in churches, not to call together an assembly of worshippers, but to drive away the devil, to calm storms and tempests. They were first christened and blessed by a bishop; hence the belief in their efficacy during the reign of superstition. I may just mention that the curfew-bell is still tolled here, a law enacted by William the Conqueror, which has ever since been strictly observed.

In the churchyard there are to be found many quaint and ludicrous memorials of the dead, one of which I can hardly omit, written by Dean Swift on the Earl of Suffolk's fool, although it may be somewhat out of place in the pages of the 'Gardener':—

“ Here lies the Earl of Suffolk's fool,
Men called him Dicky Pearce;
His folly served to make folks laugh,
When wit and mirth were scarce.
Poor Dick, alas! is dead and gone,
What signifies to cry?
Dickies enough are still behind
To laugh at by-and-by.”

I now passed on to the kitchen garden, and was fortunate to find Mr Hunt at home. The space allotted for vegetable culture is about 4 acres; there is also a large orchard, confined principally to the

growth of Apples, which are mostly local varieties. The collection of Pears is limited, but comprises many of our best kinds, grown in the form of dwarf standards by the side of the walks and in lines across the vegetable quarters. Except Apples and bush-fruit, the other crops are little better than a failure, owing to the severity of spring frost.

I was first shown into a range of vineries of three divisions; the first containing a miscellaneous assortment, giving a guarantee that Mr Hunt thoroughly understood this branch of his profession. The most noticeable were the Black Hamburgs, which were certainly of first-class character; not that we would dwell so much on the size of the bunches, which would weigh, on an average, from 3 to 3½ lb. The berries were the objects of attraction, coloured to perfection, and measuring, in some instances, over 4 inches in circumference. Here for the first time I have seen the Black Muscat of Alexandria, or what is probably better known as Snow's Muscat Hamburg, in excellent condition, growing on its own roots. No grafted plant could do better; the bunches measured 10 inches generally across the shoulders, and 12 inches deep; some were slightly in advance of these figures, but that was the exception. This is one of the best-flavoured varieties, but difficult to manage in some soils. With regard to the White Frontignan, Mr Hunt is under a slight mistake: what he grows for that kind is Troveren Frontignan, a Grape of very high quality, but unless grown under Muscat heat it never ripens properly. Who ever saw the White Frontignan produce bunches 12 inches deep and 10 inches across the shoulders? I never have, and doubt very much if any one else ever did. The Duchess of Buccleuch Grape, although requiring no great amount of cultural care, was out of character, badly set, and without shoulders. Except a plant of Buckland Sweetwater, the second house was planted with the White Muscats, the fruit so finely swelled and so richly coloured that it would require some considerable exertion to match them, whether we estimate the size of the bunches or berries. The Buckland Sweetwater is a large showy Grape, useful, and keeps well, of a beautiful golden colour; but after tasting a disagreeable flavour remains on the tongue, somewhat akin to the flavour of quinine.

The third vinery is appropriated to late varieties; the crop was excellent, but there was no feature deserving special remark. Mr Hunt has adopted the plan of what is common in wet localities, of raising his vine-borders above the general level, and which is more necessary when the subsoil is a strong retentive clay.

We next entered two span-roofed greenhouses, containing a varied collection of plants of no particular value: soft-wooded stuff, grown

for indoor decoration. There are also two plant-stoves of the same shape appropriated to a similar purpose ; and so long as a demand of this kind exists, no man, however qualified as a plant-cultivator, can display any great amount of ability.

The Pine-stoves are like those just mentioned, ridge-roofed, and contain a variety of kinds, but confined principally to Queens, the prickly and smooth Cayennes, and the Montserrat, a fruit of which was ripening that would weigh from 7 to 8 lb. Between this and the Black Jamaica I have never been able to make a distinction, unless what may have arisen by cultural treatment.

The conservatory stands in the pleasure-ground, and it is to be regretted that such an expensive structure should have been erected so antagonistic to the requirements of plants, when the elements necessary to good cultivation are so well understood. To this deviation there is no limit so long as the mere architect is allowed to indulge in fanciful schemes. Were it ornamental, there might be some excuse, but it is nothing of the kind ; it is 80 feet long and 20 feet wide, a broad walk running down the centre, and narrow paths skirting the boundary ; the roof, nearly 30 feet high, is of a circular form, and were it darkened, would give the idea of entering a railway tunnel. The roof is festooned with creepers, which to some extent break the rigid formality, but the plants below were objects of commiseration. How could they be otherwise, so much shaded, and at so great a distance from the direct rays of light ? No man, however skilful as a cultivator, will ever sustain his reputation under such conditions.

Immediately behind the conservatory is a high yew hedge of an unknown age, but said to be as old as the castle, which some years ago appeared to be in the last stage of decay. The late Lord Fitzharding, anxious to preserve so old a relic, ordered all the decayed and sickly parts to be removed ; indeed, so severe was the cutting that some of the principals were trimmed so closely as to leave little more than a naked stem. Now what was considered to be in the last stage of decrepitude is as vigorous as ever, and may endure as many ages more.

There is no flower-garden ; all out-of-door decoration is confined to narrow terraces by the castle walls, and on some of the slopes in the pleasure-ground. During the long and severe drought the appearance was by no means inviting : in almost every case bedding plants have suffered ; how much more, then, where the soil is shallow and light ? Up to the 6th of August there has not been a shower heavy enough to benefit vegetation for eleven weeks : so fatal has the drought been to surface-rooting trees that old-established plants have died. At so ancient a place as Berkeley Castle I was disappointed at not finding larger and more aged trees ; nor could I learn that any celebrated for

magnitude existed on the estate. To catch at a conjecture, it is possible that early specimens have disappeared through debility. There are, however, in the pleasure-ground several Scotch Firs, with large trunks and widely-expanded branches, which betoken great age, and are believed to be several hundred years old, still in perfect health. This tree, let me observe in conclusion, which is generally applied to servile purposes, is when old very picturesque, and gives a distinctive character to a landscape.

ALEXANDER CRAMB.

TORTWORTH.



NOTES BY THE EDITOR.

WE last month made a run as far as Falkirk, ostensibly to see the exhibition of the Falkirk Horticultural Society, which was held in the beautiful grounds of John Russel, Esq., the Provost of the town, but more especially to see these grounds themselves. Mayfield is now one of the places that all who take an interest in Conifera, Orchids, and a very unique style of "bedding out," feel bound to visit when they have an opportunity. The exhibition, which was held in a marquee in the lower part of the grounds, was a very good one for a provincial town. Much of the fruit was fine, the vegetables excellent, and many of the plants, though not large, were in high cultivation. The grounds being open to all who visited the exhibition, there was a very large gathering of all classes in the neighbourhood, who seemed to roam about amongst the fine Conifera and other choice plants with evident delight. Mr Russel, with his usual hospitality, entertained the judges to dinner in his mansion, he himself presiding—Mr Gair of the Kilns, his near neighbour and an equally enthusiastic horticulturist, acting as croupier. Falkirk has long been famous as the centre of great industry in connection with iron and coal. It is now in a fair way for establishing its reputation as one of the most interesting districts in Scotland certainly, and we might almost say Britain, to all who are fond of Conifera, fine Rhododendrons, Orchids, and fine flower-borders. It would be worth while to trace the rise and progress of this devotion to rare shrubs and trees which exists amongst such a number of gentlemen, all clustering round Falkirk, while in the neighbourhood of scores of similar towns no such taste is to be met with. Some one must have gone mad on the subject and bit the whole of his neighbours; certain it is that there are many thousands of pounds' worth of rare shrubs and trees, all in high health and keeping, within rifle-shot of Falkirk, as all who have seen the splendid collections belonging to Mr Russel, Mr Gair, Mr Neilson, Mrs James Russel, Mr Aiken, and

others, can testify. It is not our present intention, however, to attempt a general description of these most interesting collections, but to give some idea of the ribbon borders at Mayfield: one of these, which is 300 feet long and about 10 feet broad, is planted as follows:—It is beneath a grass terrace, and there is a grass walk between it and the slope of the terrace about 10 feet wide. The first line next the grass walk was *Cerastium tomentosum*, then a line of the curious pink-foliaged *Alternanthera spathulata*, next to it *Arabis lucida variegata*. This plant thrives and grows at Falkirk as we never saw it do elsewhere; the cool bottom and strong loam of the district suit it. Then a row made up of *Dactylis glomerata variegata* and *Viola cornuta* planted alternately, the blue flowers of the *Viola* throwing in a beautiful shade amongst the white wavy grass; then came ovals of *Coleus Verschaffeltii*, surrounded by a belt of Mrs Pollock Geranium, as yet the best of its class for bedding purposes: these ovals were linked together by plants of *Centaurea ragusina*, the fine silvery foliage of which contrasted beautifully with the *Coleus*: beyond these ovals was a line made up of *Dactylis* and Mrs Pollock alternately, and beyond that a very fine row of Christine Geranium, the whole backed up by a line of Golden Yews, beyond which were masses of fine *Conifera*. This border was, to our taste, one of the most pleasing we ever saw. In another part of the grounds there is a walk about 500 feet long, with borders on each side, backed up by *Conifera*, planted as follows, and most effective: about 6 feet of the width of the borders is covered with a groundwork of *Gnaphalium lanatum*, pegged to the ground, forming a silvery carpet. In this are planted small round clumps of Mrs Pollock, *Iresine Herbstii*, surrounded by a row of Flower of Spring Geranium and Cloth of Gold Geranium. Along the front are dotted single small plants of *Coleus Verschaffeltii*, *Dactylis glomerata variegata*, and *Viola cornuta*; and along the back, next the *Conifera*, is a fine line of Scarlet Geraniums, which, with the exception of the *Viola cornuta*, were the only plants in the border that were allowed to bloom. These borders are composed of plants that suffer no diminution of their beauty in wet weather, a subject well worthy the consideration of those who live in wet localities. We have omitted to remark that this grand walk terminates in a sort of half-moon of flowers planted on a sloping piece of ground, and formed into zones, like the foliage of some of the Geraniums.

Mr Russel has had a bite from Mr Gibson of Battersea, or some other individual labouring under the subtropical phobia, and has planted a section of his grounds with, amongst others of this class, *Begonias*, *Palms*, *Indiarubber*, *Cannas*, *Colocasias*, *Coprosia Bauerii*, with *Panicum variegatum* as a carpet: then in other beds are *Dra-*

cænas, Echeverias, New Zealand Flax, *Klenia tomentosa*, *K. repens*, with Agaves, variegated Aloes, and many other plants of the same character; and we confess that all these plants were in good health, and had repaid the labour bestowed on them. We cannot, however, forget that this has been an exceptionally hot summer, and we predicate a comparative failure with such plants in an ordinary Scotch summer, while we give all honour and credit to those who attempt to produce what may be termed a "new floral sensation" in the neighbourhood in which they live; and in this respect Mr Russel and his indefatigable gardener, Mr Sorley, have succeeded this year.



HINTS FOR AMATEURS.—OCTOBER.

Now that frost may be expected severe enough to injure tender vegetables and other plants unprotected, the necessary coverings should be in readiness without delay. French Beans, Ridge Cucumbers, and Vegetable Marrows, we have often seen kept on by protection for weeks, in favourable autumns, when others, unprotected, had perished. The mats, boards, or whatever is used, should be put on early in the afternoon, before the sun is quite gone, and taken off when other plants in open ground are thawed. Cauliflowers can be covered when "hearting" with old mats, or pieces of old nets, till they are fit for use; and if not immediately wanted may be put under cover, placing the roots in moist earth or sand, and can be kept for some time. Though no vegetables are so good as when fresh cut, a quantity of Parsnips and Jerusalem Artichokes may be lifted for present use; the crop being left in the ground (where it keeps best) may become frozen in. Carrots and Beet may now be lifted and stored in dry quarters, free from frost; any roots broken or bruised should be kept out, as they would help to render the others useless. Surface-stirring with hoe and fork should be continued as late as can be done; it will tell favourably among all growing crops. Cabbage may be planted out still in mild southern localities, but in colder parts it is better to prick them in sheltered positions, to be planted out in February or March. If there is no protection from north and easterly winds, Pea stakes may be thickly stuck beside the plants; evergreens could be tied thickly over the stakes, which would act even better than a wall, as the wind would be broken, instead of passing up one side and down the other, as with a wall. Asparagus-beds may now be cleared of all stalks, weeds, &c.; some use salt for the latter, but the practice, though excellent when the Asparagus plants are growing, is not favour-

able when the roots have become inactive. The less they are excited now they will better stand the winter. Earth may be thrown over the roots from the sides of the rows or beds, and left higher in the middle to throw off wet, but covering up unripened roots from sun and air will cause many of them to die off in the course of the winter. Spinach and young Lettuce may be thinned moderately: as many of the plants may die off in the course of winter, better only to keep them free of one another, and thin more frequently as the season advances. Wood-ashes or sifted coal-ashes sprinkled among these crops will do much to keep slugs in check. Everything in the shape of decaying vegetables should be taken at once to the rubbish-heap or to vacant ground, to be trenched down; cover them up with dry earth, to prevent a nuisance. Celery may be earthed up when dry; if possible, let all suckers be carefully cut away, keeping the stems upright and compact, and the hearts of the plants free from the earth: pieces of mats, or any tie that will speedily decay, may be used to keep the stems in their place till the earth is placed round. Manure may be wheeled on to vacant spaces requiring it; better to give a moderate quantity of manure at each time when the ground is turned over, than large quantities at long intervals; and if manure is rank, it should be turned into the bottom of the trenches, but if thoroughly decayed it would be more serviceable if turned under the top spit. Those who are in the habit of trenching deeply will have seen the advantage of the practice during the past dry season. Now is the time to prepare for successful cropping, especially where soil is stiff; every surface should be ridged up to the action of the weather, forking it over again in spring, or when wanted, when it will break freely and not be liable to crack with drought: where there is much cracking, it is a sign that deep cultivation has not been much attended to. Light soils with a clay bottom may be improved by bringing up a little of the subsoil to the surface, and when the ridges are broken down the heavy and light soil may be thoroughly incorporated. The clay bottom should be turned over roughly to act as drainage; sand may be freely used in the surface of heavy soil; loose manure and leaf-mould can also be advantageously trenched into the bottom. The trimmings off Strawberry plants and the clearings off old Strawberry plots, trenched down, are excellent for lightening very heavy soil. Lettuce fit for use, and likely to be damaged with frost, will be safer under protection now; the plants, if of fair size, may be lifted with balls of earth to their roots, and placed thickly together in any pit or frame where covers can be placed over when necessary; the roots may be well watered and dry earth placed over them, making a dry surface: they will keep long and be useful if ordinary attention is given to covering

and uncovering. Glass covering, where Lettuce, Radishes, &c., are wanted late, is almost indispensable. Broccoli, where growing very strong, may be lifted and carefully laid down with the hearts to the north, as in spring the young heads would not be injured by sun when they were frozen. When earthing-up can be done to Kale, Savoy, and other similar vegetables at this season, it may be of great advantage in throwing off wet and slightly protecting the roots; this practice is unnecessary here, as our ground is thoroughly drained and of lightish nature. Earthing-up in summer we think a waste of time and injurious to crops. Seakale and Rhubarb, when required early, should be seen to as soon as the leaves begin to decay. They should be cleared of all rubbish, and pots or boxes placed over the crowns, and a quantity of stable-manure placed over all. Leaves well mixed with the material will keep the heat steady and permanent. However, it is well to begin this work slowly at first, and at no time allow the heat to be more than 80°. Where Seakale and Rhubarb are limited, it is well to let forcing alone till the second week of November. Where it can be brought on in such places as cellars, Mushroom-houses, &c., the work is much lightened and the produce of better quality; but slow forcing has much to do with quality and size. When a strong heat is kept up, the heads become drawn up and weakly. Mushrooms, where grown out of doors on ridges, must have a thick coating of dry hay or soft straw, not only to keep out cold, but to keep up a moderate heat. Of course the large body of manure which is used when forcing out of doors will keep up a steady temperature the same as an ordinary hot-bed, but for Mushrooms the bed is made into a sharp ridge. For beds under cover, small portions made at one time are more likely to secure a steady supply than large beds made at long intervals. Fresh manure, with all the virtue left in it, is the principal secret of securing good crops, therefore the practice of drying it in sheds, &c., turning it and making heaps, is the sure way to be unsuccessful. If the fresh manure (although plenty of straw is left in, it will do no harm) is taken before, washed with rain, and spread out thinly in the sun for a few hours, and, when moderately dry, taken in, thrown in a low ridge till the heat rises, it may then be made into a bed from 8 to 12 inches or more thick, and beaten as hard as a floor. There is then little fear of a crop if good spawn can be obtained, which is often a difficult matter, and a charge by some is put on it nearly double what it ought to be.

Any who are about to plant fruit-trees should prepare as soon as possible the spaces where the trees are to stand, making large spaces, concreting the bottom, which should slope gently forward to carry off any stagnant water: a few stones placed over the concrete will be of service. A quantity of good strong loam should then be put over them, raising

the pit to a level with the surrounding soil, or even higher if the locality is damp. The roots should be placed out flat, training them regularly over the surface, cutting off any that are strong and without fibre. Where any are broken they should be cut off smoothly behind the splinters, as they might back and cause cankering. It is sometimes well, when planting to any extent is to be done, that a visit to the nurseries should be made, and trees to suit should then be selected, but care should be taken to avoid choosing any trees which are old and have been frequently cut back; such canker-producing rubbish is expensive when accepted for nothing. Figs, however, are an exception to this rule, but they are best when grown on without mutilating them much. Nurserymen, whose fame is abroad for good healthy trees, take care that no stunted old stock remain on hand, as they are destroyed if not sold when in proper condition. Pruning may be done as soon as the leaves are off the trees or bushes, but as this is seldom the case before next month, we hope to say more on using the knife then. Lifting, half lifting, and root-pruning should be attended to as soon as possible, and this must be done carefully, and not trusted to inexperienced workmen (see former directions). If Auriculas are not already in their winter-quarters, let them be placed there at once; stand the pots on a hard surface where worms cannot enter them; give plenty of air in mild weather, using the lights only to keep off rains and frost. This applies to Pinks, Carnations, &c., kept in pots. Planting all kinds of bulbs on deep ground may be done now. They require plenty of good rotten manure placed at bottom to feed the plants when the roots go down. Dahlias, or any other plants done blooming in the open ground, should now be lifted and placed in their winter-quarters. Dahlia roots should be dried, and all loose soil taken off them, and placed in a dry place where frost cannot reach them. Chrysanthemums should be taken to their winter-quarters and neatly staked out, giving a good coating of rotten manure over the surface of the pots; liquid manure applied moderately at each watering will be useful. They require plenty of light and air. Allow all Fuchsias, when done flowering, to gradually dry off, and keep from frost. Geraniums and other plants, to be kept through the winter, should be well hardened with air, and watered only when absolutely necessary, avoiding frosty or cold winds and damp. Cyclamens, Early Cinerarias, Primulas, and other winter-flowering favourites, should be kept near the glass and carefully watered: nothing should be crowded, or dead leaves, weakly foliage, and a short blooming period will be the result. All plants to be forced should soon be under cover. Wet and frost are injurious to plants which are to be forced, however hardy they may be.

M. T.

NEW PLANTS OF THE PAST MONTH.

AUGUST is a month generally prolific of new plants, and that month in the present year has formed no exception to this rule. Their multiplication is at once an illustration of the ceaseless enterprise of our leading horticulturists, as well as an indication that new plants are in large demand.

First-class certificates have been awarded to *Passiflora cincinnata*, a very handsome flower, so named on account of its curly purple thread-like filaments, from Mr Frost of Dropmore Gardens : to *Hemerocallis picta*, a plant singularly marked just above the surface of the soil, from Mr W. Bull : to *Darlingtonia Californica*, a curious little North American Pitcher-plant, from Messrs Veitch & Son : to *Iresine Lindeni*, a very distinct species, and highly spoken off as an ornamental-foliaged bedding plant, from Mr Linden of Brussels : to *Eranthemum elegans*, a very pretty new variety with white flowers, the lowermost petal of which is closely dotted over with minute crimson spots, from Mr W. Bull : to *Agave pendula*, supposed to be a variety of *dealbata latifolia* ; and to *Pourretia argentea*, both useful plants for certain kinds of garden ornamentation, from Mr Green, gardener to W. W. Saunders, Esq. : to *Habrothamnus elegans*, var. *Hawkshawii*, a white-leaved variety of this well-known plant, likely to be very useful for greenhouse decoration, from J. Hawkshaw, Esq. ; and to *Echeveria glaucometallica*, a stout hybrid variety, forming an excellent addition to these useful succulent plants, from Mr R. Parker of Tooting.

The following Ferns have received first-class certificates : *Cyathea Hookeri*, a handsome slender Tree-fern, from Messrs Veitch & Sons ; *Pteris straminea leptophylla*, a very distinct-looking narrow-leaved Fern, from Messrs Rollisson & Sons of Tooting ; and *Scolopendrium Kelwayi*, a handsome and somewhat novel addition to this numerous class, from Messrs Kelway & Son of Langport.

Of Orchids there have been some fine new examples shown ; the following have received first-class certificates : *Odontoglossum Krameri*, a handsome species with white blossoms suffused with purplish-violet, from Messrs Veitch & Son : *Cattleya Eldorado splendens*, a beautiful species, having delicately pink sepals and petals and a large orange-stained lip tipped with purplish crimson : and *C. Wallisii rosea*, which, like the one just named, has delicate pink sepals and petals and an orange-stained lip, but the colouring in this case is not laid in quite so heavily as in that of the first-named kind : both are grand acquisitions to the genus to which they belong, and were sent by Mr Linden of Brussels. Mr Green, gardener to W. W. Saunders, Esq., also received a second-class certificate for *Trichocentrum albo-coccineum*,

an Orchid with brownish-yellow sepals and petals and a somewhat large white lip prettily stained with purplish lilac.

New Caladiums are just now on the increase, the golden-leaved kinds furnishing some capital examples. First-class certificates were awarded to the following: Dr Lindley, from Messrs Downie, Laird, & Laing; and Reine Victoria, from Messrs Veitch & Sons: and second-class certificates to Louis Porrier, from Messrs Downie, Laird, & Laing; to Meyerbeer, from Messrs Rollisson & Sons; and to Alfred Bleu, from Messrs Veitch & Sons. Two unnamed varieties raised at the Royal Horticultural Society's gardens at Chiswick have also received first-class certificates.

A plant of the new and fine *Allamanda nobilis*, shown by Mr W. Bull, has also received a first-class certificate. It is an imported species, and was bloomed first at the nurseries of Messrs Glendinning & Sons of Chiswick. "In the brilliancy of its clear yellow ample flowers it far excels any other *Allamanda* yet known, as it does also in their full circular outline. The flowers are of the brightest and richest clear yellow, without stain of any kind in the throat. They measure from 4 to 5 inches or more across; and what gives it additional value amongst *Allamandas*, they have a decided aromatic magnolia-like perfume." An assumed new species, named *A. Wardleana*, has just been shown by Mr J. R. Tanton of Epsom, but is considered by the Floral Committee to be identical with the true form of *Allamanda Hendersoni*, which received a first-class certificate some four years ago, the true species of which, Mr Tanton strangely asserts, has never been distributed, though actually sold to Mr Bull and sent out by him. Some good plant-growers assert that the plant shown as *A. Wardleana* is simply *A. Schottii* under cool treatment. To set this last matter at rest, as well as its assumed distinctness, the Floral Committee have deputed the Rev. M. J. Berkeley and Mr Thomas Moore to make a botanical examination of the plants, and cuttings have been sent to Chiswick to test the difference by actual growth. Meanwhile Mr Tanton vehemently asserts that the Floral Committee have "meted out" an "unjust measure" to the "most distinct and withal the finest species of this magnificent genus."

Cyanophyllum Bowmanni, from the gardens of the Royal Horticultural Society, Chiswick, has received a second-class certificate. It is in the way of *C. magnificum*, from which, however, it differs sufficiently to render it an excellent associate of that noble species. *Campanula floribunda*, from Mr J. Salter, Hammersmith, received the same award. In growth it is not unlike *C. garganica*, but has the large and showy flowers of *C. Barallieri*, and is a good addition to these useful hardy kinds.

What are popularly termed florist's flowers are also in strong force. What the Floral Committee could have seen in Tea Rose Reine de Portugal, to have awarded it a first-class certificate, passeth knowledge. As shown at a recent meeting by Messrs Paul & Son, it was in poor condition, the bronzy-yellow flowers being thin and small.

First-class certificates have been awarded to the following fine Hollyhocks :—Wellingham Model, pale primrose, of medium size, but very fine shape and substance ; and Ida, buff ground suffused with fleshy carmine—a distinct, fine, and novel variety—both from the Rev. E. Hawke ; also to Sovereign, from Messrs Downie, Laird, & Laing, of a bright claret crimson hue—a full and finely-shaped flower, forming a good spike. Lord Napier, rich bright crimson—extra fine ; Fascination, lilac dashed with pink—a pleasing flower ; and Scarlet Gem, bright crimson scarlet and very showy,—are fine seedlings, shown by Mr William Chater.

A first-class certificate was awarded to *Primula Sinensis filicifolia alba flore pleno* : it is a capital double white variety of the Fern-leaved Chinese Primrose, with the flowers slightly suffused with flesh colour. It was shown by Mr R. Parker, Tooting.

The following varieties of the *Gladiolus*, shown by Messrs Kelway & Son of Langport, have received first-class certificates :—Julia, pink, suffused towards the edges with carmine in the form of a feather, and flecked in the same way with rosy crimson, the throat pencilled with rosy purple ; Formosa, something in the way of Julia, but of a paler ground-colour, the edges of the segments feathered with violet carmine, the throat pencilled with purple ; Lord Napier, vivid orange scarlet, marked with white on the lower segments, a beautiful and distinct variety ; and Ulysse, pale violet pink, feathered and edged with bright rosy carmine—a striking and beautiful flower.

The same award was made to *Nosegay Pelargonium Masterpiece*, a fine and somewhat novel-coloured variety ; the pip salmon-crimson round the centre ; the edges of the young blooms orange crimson ; trusses large and globular ; habit good ; foliage faintly zonate. It was shown by Mr Geo. Smith, Tollington Nursery, Hornsey, who has raised some of the finest *Nosegay Pelargoniums* of the present day.

R. D.



BEE-KEEPING IN 1868.

LAST year I intimated that it was my intention to give annually a statement of the profits of my bee farm. Some of your readers will remember my saying that the profits of good and well-managed

hives in 1864 amounted to £3 per hive. One of my friends made £40 from nine hives that year. In 1865, £2 per hive were realised; and in 1866, £1, 10s. My profits last year (1867) amounted to £1, 10s. per hive; in other words, £18 in cash and £10 increase of stock were my gains here last year, from eighteen hives. This year was begun with twenty-four hives, valued at £28, or about 23s. each. I may here state that a good-sized hive, well stored with bees and honey, is, even in autumn and winter, worth 30s. Twenty swarms were obtained in May and five in June, thus swelling the number to forty-nine hives. Twenty-eight have been selected and kept for stock, valued at £35, or 25s. each. The hives marked for honey have yielded 500 lb., or thereabouts, and 22 lb. of wax. I say "thereabouts," for it has not been all accurately weighed yet. We have sold about 200 lb., and I am quite sure that there is more than 300 lb. in the house unweighed. The balance-sheet will be,

500 lb. of honey	£25 0 0
22 lb. of wax	2 4 0
Increase in number and value of stock	7 0 0
	<hr/>
	£34 4 0
Expenses	5 0 0
	<hr/>
Profit	£29 4 0

Twenty-four shillings per hive, at the close of so splendid a summer as last, is but "small cheer" to a bee-keeper. Many of your readers on the north of the Tweed will wonder how it is that so little has been realised from bees here, while they have been reaping harvests of honey unparalleled for abundance. The rains which fell in May in Scotland made the white clover yield honey in June and July, when both wind and weather were so favourable for the bees gathering it. Here we had no rain in May; and a finer month for honey I never remember—some of my hives rose to 50 and 55 lb. before swarming. When June came, the fields began to be burned up, the grass became brown, and white clover never appeared this year. My poor industrious bees were comparatively idle during six weeks of the finest weather ever seen for honey-gathering; and some of their hives lost 15 lb. in weight during that time. Whereas at Carluke (my native village), where bees are managed as they are here, they rose in weight to 100 lb. on the clover, and when brought from the moors many of the swarms of this year weighed 140 lb. each, and one was 168 lb. Here, in July, a great many of the hives ceased to breed, simply because the bees could not get honey enough to keep themselves. Their wisdom or instinct forbade them to under-

take the keep and care of brood in the comb. The commissariat of a large hive containing 20,000 young bees in a state of development is no trifle; and till this question is considered, the story of the industry of the honey-bee will never be told. I took forty-eight hives to the heather in Derbyshire in July, where they collected as much honey as I had reason to expect. My heaviest swarm of this year was 60 lb., and some two or three hives that yielded swarms were 70 lb. each.

One of the best of my twenty-four hives, set aside for keeping last autumn, had eaten all its food by the beginning of February; and two-thirds of its bees died of sheer starvation. I happened to look into the hive when the bees were thus dying, and at once took them to a warm place, fed them, and saved the remaining third of the bees; but the hive was weak all the year, and never swarmed. It had honey enough to keep its own bees, but I put a large swarm into it in September, and gave it several pounds of sugar, which it appears was not enough. I mention this case with a view to reassert the fallacy of the Swiss clergyman's discovery (statement), that two swarms united in autumn eat no more honey than each would separately.

Three more hives, taken from home some miles in early spring, did not thrive at all. On examining them, I found all of them so full of foul brood that I drove their bees out, and united them to other hives. Four hives were thus rendered comparatively worthless. Bees this year required but little feeding to keep them alive, but the swarms that were most fed, on being put into empty hives, prospered and yielded the most. My expenses will always be proportionally more than most other bee-keepers, for I have to take my bees away from the huge black city of Manchester, and "pay rent" for my farm more in the country. I give cottagers so much per hive to let them stand in their gardens.

Owing to the small number of bees hatched in July and August, and deaths in September caused by their robbing propensities, I expect that many—almost all English hives—will be weak in bees next spring, and doubtless scores of hives will perish in the winter. My twenty-eight hives have got all the bees of those hives from which we have taken the honey. They are therefore in better condition than most of the hives of England are.

In conclusion, let us all learn a lesson from the industry of bees. £1, 10s. or £2 profit per hive appears to be a great deal; but when we remember how many hands are at work, and not one idle; that at the rate of £2 profit per hive it takes fifty bees a whole season to gather one farthing's worth of honey and keep themselves,—we stand in amazement and wonder at the untiring energy and unflinching industry of these creatures, improving each shining hour, in brushing

together the sweets of flowers imperceptible to human eye ; collecting and carrying them home in *sacks* for the feeding of their young, and storing them away for the winter of life. Taking bees for our instructors, we should be diligent in business, never weary in well-doing, and lay up a good foundation against the future of our existence.

A. PETTIGREW.

BRIGHTON GROVE, MANCHESTER.



GLOXINIA SEEDLINGS.

To those who have to get up decorative plants in quantity the Gloxinia is a useful subject. From seed they are as easily managed as the Chinese Primula. Sown in March, a pinch of seed in a pan of fine soil, covered with a sheet of glass or a bell-glass, they soon germinate in a cucumber-house or propagating-pit. When fit to handle, they should be pricked out in boxes in fine peat-soil and silver-sand, and grown on. In June they will be fit to pot into 3-inch pots, in which they will flower throughout August, September, and October. Out of a very small packet of good seeds we annually raise several hundred plants of endless variety, both of the drooping and erect sorts, especially the latter. When done blooming, the bulk of them may be thrown away, selecting the best to grow on into larger plants the following year. They answer well in a warm conservatory or intermediate house associated with Achimenes, Caladiums, Ferns, and suchlike ; and for finishing off front lines in small pots with *Poa trivialis*, *Lycopod*, or Variegated *Hydrangea*, they are admirable.

THE SQUIRE'S GARDENER.



CHRYSOBACTRON HOOKERII.

I MUST thank an 'Amateur' for his information respecting this plant. I have never seen it in the perfection he describes. It is fourteen years since I first saw it growing in a bog-bed, which was wet enough to suit even a more drowthy plant than this, but unfortunately it was stagnant and sour ; and although the plant flowered, it was not in the perfection spoken of. Twice since then I have come across it in the hands of cultivators, whose perception of its wants was not so correct as an 'Amateur's,' and their success was proportionally bad. I am glad to find that its real excellence is superior to my estimate of it.

W. S.

CENTAUREAS.

It is rather curious to observe that *Centaurea candidissima* has been considered difficult to propagate. It is somewhat like Variegated Geraniums in its succulency, downiness, impatience of damp, and being able to withstand drought: a drouthy summer suits it like the Geranium; like the Geranium, it propagates freely in heat in spring. In the autumn it can be propagated in boxes, standing in the open air alongside of Geraniums, with exactly the same treatment. We annually propagate a large quantity of it in autumn, single cuttings in small pots, or three cuttings in 4-inch pots, to stand the winter and be useful for winter decoration, for mixing with Tulips, Scillas, &c., on the stages in spring,—potting the whole singly, however, to get them on for bedding-out. These cutting-pots are placed close in a cold pit in August, slightly shaded from the mid-day sun, leaving the lights off during the night and in dull weather; and the result is just the same as with Geraniums. The plants which we find to furnish the best cuttings are old plants which have run to flower in spring. Merely pinching off the flowers and planting them out at bedding-time, they will furnish a host of stubby cuttings much better than young succulent plants would.

The *Centaurea gymnocarpa* has done admirably as a bedding-plant this season, the dryness having intensified its colour. As single plants in panels it is stately and graceful, if the plants are grown to a good height before planting out. This, like some of the strong-growing Geraniums, is improved by being planted out, pots and all. It is quite as readily propagated as its dwarf brother, and is more readily obtained from seed, but is not of much use the first year.

THE SQUIRE'S GARDENER.

**ORCHARD-HOUSES.**

We are indebted to the Rev. John Fountaine, Southacre Rectory, Brandon, Norfolk, for an engraving and description of a very ingenious apparatus he has invented for removing all the trees in pots in an orchard-house into the open air daily at little or no cost for labour, and, to use a railway term, shunting them back into the house at night. It is a framework of cast iron, with wheels at intervals, which run upon light rails laid down on the floor of the house; and there are cast-iron pans in which the pots containing the roots of the trees are placed. Our opinion is that by this contrivance a crop of Grapes could be grown in every orchard-house, which without it would be nearly impossible, as the free admission of air in all directions so necessary to give such fruit as Pears their proper flavour, would be a temperature too cold for Grapes; whereas, with the apparatus we refer to, the whole of the trees could be removed, and the house

receive vinery treatment during the day, and in the evening the train of orchard-trees could, as we have already said, be shunted into the vinery for the night. Thus the fruit could get natural rain and exposure to the free air, so essential to give it flavour.

Mr Fountaine writes, "Mr Rivers is now trying it with fine old Apricot-trees, which, he writes me the other day, are full of fruit, and all doing as should be."



COLEUS.

A FEW observations on the somewhat singular notoriety which has been of late obtained by this plant may not be unacceptable. Our old friend *C. Verschaffeltii* was, I believe, brought out by Mr Bull, and was a very good indication of his knowledge and foresight, as it is reported that at first he got much dispraise from his friends for sending out what was called "such rubbish," and it is now one of the most effective foliage-plants in use; but it is all artificial. The method reported to be used in Battersea Park is in the first place the necessary preservation of some stock plants in a dry hothouse or stove during the winter, the very easy propagation of young stock in the spring, the very careful hardening off, so that the stock may be in healthy and ornamental condition by early summer, then plunging them very close together when put out, giving them plenty of water, and taking off with a delicate pinch all shoots which are in excess from time to time—by this process the Battersea *Coleus* beds are what they are, perfection. The *C. Verschaffeltii* stuck out in the border with only the usual care is a failure, and this leads me to express my surprise at the use which has been made of the various new hybrid *Coleus* of the present season. The history of those of only the last few months, if not instructive, is certainly amusing. I have been so located as to witness the whole proceeding. The party in charge of the practical department of the Royal Horticultural Society obtained some curious varieties; they were sold by public auction at from £40 to £60 the plant. Mr Bull brought out many varieties, some of which, I think, quite took the lead. Mr Wimsett brought one, *C. Telfordi*, for which he said he paid a large sum; and there are a few others of equal character. These were advertised early in the year at 10s. 6d. to 15s. per plant, with allowance to the trade, to be sent out about July, and now I find myself possessed on the 1st of September with about twenty varieties of these advertised plants,—some sent to me in thumb-pots, some by post, and which cost me a few pence apiece, and most of them have already given me another plant as good as the one purchased. Some of these were exhibited at the

horticultural meetings and shows under the most artificial state of cultivation, and were unquestionably most beautiful foliage-plants when so treated. Knowing and witnessing the assistance which art affords the beautiful outdoor exhibition of the *Coleus Verschaffeltii*, I repeat my surprise at the little care and doubtful taste which are displayed in the outdoor exhibition of these hothouse or stove plants within six months of their coming into notice. Some of Mr Bull's—for instance, *C. aureus marginatus*—may respond to the same style of cultivation as *C. Verschaffeltii*, and there are very few of the varieties but what would repay the very little trouble there exists in propagating them, if carefully and artistically used on the plunge system out of doors; and all, shown out in the artificial and artistic form in which they were displayed at the flower-shows, would prove curious and interesting additions to the conservatory or greenhouse when blooming plants pant for and demand the open air.

I shall feel pleased if this notice is worth your attention, and if it induces the admirers of the *Coleus* not to accept the experience of the last six months as a fair estimate of the value of the very curious and interesting varieties of the last season.

DOWN SOUTH.



NOTES ON GREENHOUSE PLANTS.

(Continued from page 379.)

BULBS.

Bulbs! The sound engenders a pleasant sensation, and ere this will have been uttered by the lips of countless numbers over the length and breadth of our isles. Indeed, were it possible for one person to visit the thousand shops while we write, we venture to assert that that person would marvel—nay, feel confounded—when witnessing the magnitude of the demand for bulbs.

The Hyacinth, the first subject of our remarks, is a native of the Levant, and, as we are informed, one of the oldest inmates of our gardens. Its surpassing beauty and usefulness for winter and spring adornment have always secured it a foremost place in the estimation of the flower-loving community, whether to grace the conservatory of the rich or enliven the window of the poor—contented alike to unfold its rich treasures and breathe its fragrance within the palace or the cot, sometimes under circumstances not favourable to healthy growth, and leading one to the hypothesis that the embryo must have been well matured in the bulbs, coupled with strong efforts on the part of the plant to develop the stem and flowers embodied.

Necessity for Rest in Bulbs.—Rest or relaxation from active growth is obtained by withholding water in a great degree, and withdrawing the plant from heat and other exciting influences as soon as the foliage indicates symptoms of decay. The intrinsic benefit arising from rest at this stage cannot be too highly estimated. Those facts, and some other remarks we are about to make, may be considered rather commonplace by those who are already acquainted with them; but since their neglect is known to be the rock that shatters the hopes of many beginners, we are anxious to save them from such disaster; and the best way to accomplish this, we think, is to endeavour to explain some of the different processes which a bulb must perform prior to its being what is designated at rest. We do not possess a Hyacinth bulb at this moment, but will find one of the white Lily, which will serve as well. To begin, we find the leaves, stem, and flowers of this Lily to have fulfilled their respective functions, leaves and flowers being gone, and the stem partially withered. From those signs we may conclude that the inhabitant of the soil within the pot is quietly asleep and at rest. In this we are far mistaken. A glance at those half-transparent fibres, that start in all directions from these more hardened roots, tells of some economy industriously at work, which shows that we might continue our research and find an exceeding amount of food for thought and description; but we must take a leap from particulars, and content ourselves with generals. Suffice it to say that those semi-pulp-like bulbs which cluster and embrace the old stem have in a great measure to undergo that essential finishing process which is absolutely indispensable before those scales which look now so sluggishly overlapping each other become compact, glossy, and firm; and instead of having that thin watery puny scale now occupying the centre of each bulb, it must give place to a perfected embryo stem properly furnished. In short, it is found, notwithstanding external appearances, the bulb is not at rest, but that there are internal elaborations actively going on. Sap is being elaborated into secretions; the infant stem, &c., is being formed within the infant bulb; and these several processes invariably take place previous to that short pause occurring which again ushers the bulb into visible activity.

From this is clearly apparent the drawback of suspending the work of this agent in the Lily. In like manner with the Hyacinth, if not more so, when it is considered that the latter is often expected to rush into immediate growth at the command of whoever chances to purchase it. At this crisis, perhaps, some one may inquire, What has all that has been said to do directly with the Hyacinth? Surely a half-ripened Lily-root can bear no just comparison with the freshly-imported Hyacinths, that had all the essential accomplishments fur-

nished to the highest point of attainment, and this by the professional hand of a *Dutchman*, before being sent to our shores. Our reply is, that in countless instances that same *Dutchman* has neglected—ah! we may say grossly overlooked—the furnishing of these essential accomplishments. Having got a fine glossy overcoat on the bulb, and it placed in its paper, his interest ceases, leaving time or chance to provide the rest. To be brief, we believe in the great majority of cases the bulbs should be shelved or stored in drawers in their wrappers for a month to come; this would insure ripeness, and at the same time give us flowers of the best pretensions. Before concluding this division of the subject, it may be well to note those properties which should always show themselves present in a Hyacinth bulb—namely, perfect outline, free from notches, smoothness in texture, solidity, plumpness, full size, the rim at the base of the bulb regular and full, and the upper surface exhibiting a gradual swell from the shoulders to the centre where the stem and leaves take their rise, while the latter should stand prominent above the general surface, and show no indications of softness or looseness when pressed with the fingers.

Soil and Potting.—One part rich friable loam, one part river sand, one part free peat, and the other part properly decomposed cow's manure. This, chopped well together without being riddled, affords an excellent substance for Hyacinths, as well as the other subjects mentioned. Pots 6 inches in diameter answer well. These ought to be well cleansed in water outside and inside with a hard brush, along with the crocks to be used. Furnish abundant drainage, and cover the crocks used for that purpose with a layer of withered moss, then proceed to the potting by filling the pots loosely to their rims, depositing a portion of sand in the centre of each for the bulb to rest in; next place on the bulb, pressing it into the body firmly, leaving a third of the bulb to stand above the surface of the soil after the smoothing process is completed, and three-fourths of an inch of the pot's capacity to receive water. The pots may then be plunged overhead in leaf-mould in a cold frame that has a northern aspect, without receiving water, and kept in this position until they are well furnished with roots and the crowns are protruding through the covering. This will be the signal to have them raised from their plungings and brought by degrees to stand sun and air. After occupying this position until their crowns assume their natural green, they may then be transferred to a pit, where they can enjoy a temperature ranging from 50° to 65°, and abundance of fresh air, with copious supplies of rain-water when required, adding a sprinkling of guano to the water occasionally when the blooms commence to open. The temperature in the pit should at this time be gradually diminished until it reaches that degree of heat suit-

able, or as near the prevailing heat of the conservatory as can be managed. Then each plant ought to be secured to a light neatly-furnished stake, and placed where it is to flower.

Where successions are in demand, the best rule to pursue is to fill the places with a fresh supply of those pots first potted as soon as they are lifted from their plungings in the frame, and continue successions of pottings at every stage or shift of quarters the first passes through until they are staged, commencing with a small portion of bulbs at the beginning of September, and transplanting the last set in the first week of November.

When the flowers are withered, their stems may be cut back and their pots arranged compactly in a cold frame that will exclude superfluous damp until the foliage is decayed, when the bulbs may be shaken out of the soil and kept in a dry place until the following autumn, seeing the best of them may prove serviceable for bed or border planting at least.

Culture in Glasses.—Nothing can be more simple when substantial bulbs are at command. In the first instance, let the glasses be filled with pure rain-water until it reach the base of the bulb, perceptibly touching it, but no more, after the bulb rests in the basin-like receptacle which crowns the glass. This done, they may be placed in a dull but comfortably warm place until they have pushed roots a few inches in length. By this time their crowns will have started also; now they may be placed to the light, but avoiding doing so too suddenly, and guarding them from sunshine until they become accustomed first to the ordinary light. Renew the water every eight days, and while operating be careful not to damage the roots, as they are exceedingly brittle, and when once broken die back to the bulb. A little guano given to the water is important, inasmuch as it helps the quality of the flowers if afforded them when they begin to expand their bells. Turn the glasses frequently, which will assist to balance them in their places—more especially this is the case when grown in windows—and expose them as much to fresh air as attainable, but being careful to defend them from frost. This in some measure will sustain them from assuming a lanky look, and preserve the proper cast of green in their leaves.

Tulips.—These demand little comment, seeing the same manner of cultivation suits them as has been described for the Hyacinth. The only difference worthy of note is that three bulbs may be inserted into the same size of pots. Besides Duc Van Thol, there are others that force well, such as Duchess of Parma (buff crimson), Queen Victoria (white), Yellow Pottebakker, Duke of York (crimson and buff), a nice double, and so is Lord Wellington, which has lilac-purple colours.

Narcissus management resembles that of the Hyacinth in every respect, and the same may be said of the Crocus, excepting the manner of planting them, and keeping them, in general, in a cooler place. Some taste is at times displayed in this. Different animals are represented in pot-ware, and studded with holes through which the stems of the Crocus are passed, while the bulb remains inside planted into the soil with which the body of the figure is filled. Again, the Crocus looks very nice planted thickly in ordinary pots, mixing at times a few varieties, and at other times keeping the sorts distinct.

A. KERR.

(To be continued.)



MAGNOLIA GRANDIFLORA.

THIS is a tree of great grandeur, but since the destructive frost of 1860-61 we have hardly seen a flower on it; this fine season has again brought out the flowers,—and such flowers for size, substance, and fragrance!

The tree is very hardy; its stateliness and fine foliage place it in the first rank of ornamental and evergreen trees; but the very limited way in which it is planted tells that its management is imperfectly understood.

In the west of England this Magnolia is seen in luxuriant growth, and blooming freely as a standard; but with this evidence of its adaptability, only odd trees are planted in gardens where hundreds might be. In the woods of Kings-Weston, near Bristol, are some fine standard trees; these and Photinia serrulata were some years ago growing as freely as common Laurels. At Dodington Park, in Gloucestershire, there used to be a very fine Magnolia wall; it would be interesting to know if the fine plants are still in *blooming* health. At Adare Manor, near Limerick, were some of the largest Magnolia grandiflora we have seen, but these plants were cut down, like most of the plants here, by the frost alluded to. We have frequently seen it recommended to plant Magnolia grandiflora on a north aspect; this is the opposite of what this Magnolia delights in—viz., brilliant sunshine. Fair-sized plants may be seen on the north side of a wall, but where the flowers? nor ever will be seen in such a position such fine expansive foliage as when the plants are exposed to the brightest sunshine. This Magnolia is seen in the greatest perfection in the Southern States of America; in Georgia and Carolina it attains the size of a forest-tree. A gentleman (J. P. Graves, Esq. of

Waterford) who lived several years in the Southern States, and is a most correct observer of trees and shrubs, informs me that he has seen the *Magnolia* more than 50 feet high, and branched to the ground and covered with flowers, which in June and July perfumed the air to a great distance. Mr Graves observed that the finest trees were on sloping ground—indicating what we long ago found out in this country, that drainage is an essential consideration in the cultivation of the grand *Magnolia*; not mere surface-drainage, with a slight stratum of light mould, for that is of little service to such a deep-rooting plant; it is the *subsoil* that must be drained. A fine *Magnolia* at this place, with a stem which girthed 2 feet 3 inches, was killed to the ground in '60-61. At that time there was no suspicion of the subsoil being wet, but afterwards it was discovered that the subsoil was *very wet*, owing to the natural drainage being interrupted by the foundation of a wall behind where the tree stood. I particularly observe two *Magnolia* trees of good size not far from this place, that were not injured when most of our trees were cut down by frost. I find that both the trees referred to are growing on a bed of shingly gravel, and the trees have flowered regularly.

The *Magnolia* grows fast in peat; some of the finest plants we have seen in flower are growing in peat, but the peat is deep, and the trees standing on a mound. It is surprising why small plants of *Magnolia grandiflora* are still so dear; is there any great difficulty in raising it from seed? Seed is plentiful in America, and cannot be difficult to import.

Wherever the *Magnolia grandiflora* can be grown, we would strongly recommend to plant on well-prepared ground as standards, or in clumps where it can develop its magnificent foliage, and charm with the superb deliciously-scented flowers.

CHAS. M'DONALD.



GLASGOW AND WEST OF SCOTLAND HORTICULTURAL SOCIETY'S SHOW.

THE September Exhibition of the Glasgow and West of Scotland Horticultural Society took place on the 9th of the month in the City Hall, Glasgow. Since the last show of this Society the hall has been painted and decorated, and several other improvements executed, which imparts to the room a light and airy appearance, and has the effect of rendering it a place better adapted for the purposes of a floral exhibition than it was before. The show of yesterday was by far the most successful of any September exhibition which has ever yet taken place under the auspices of the above-mentioned Society. This may be attributed greatly to the remarkably fine weather which has prevailed for some time past.

The plants and flowers were arranged on six tables in the centre, and two running along both sides of the hall. The table running along the south side of the hall was almost entirely taken up with Geraniums, golden, brown, and variegated. There were 100 varieties and about 200 plants. Perhaps this was the finest, as it certainly was the largest, collection of Geraniums that has ever been exhibited either in the west or any other part of Scotland. On the same table there was shown a choice collection of Coleus, several of the varieties of which have been introduced only this year. The exhibitors were Messrs Dregghorn and Aitken, Kilmarnock; Mr Campbell, gardener, Castlemilk; and Mr Mackenzie and Mr Paul, Paisley. Mr Neil Campbell, gardener to Mr James Couper, Holmwood, Cathcart, carried off the first prize for six Geraniums of the scarlet class. The collection of Orchids was very fine. Mr John Sutherland, gardener to Mr Peter Denny, Dumbarton, secured the first prize in this class. The hand and table bouquets were exhibited on a table on the platform, and were much admired. Mr Robert Taylor was awarded the first prize for a hand bouquet, and Mrs Agnes G. Barclay obtained the first prize for a breast bouquet. Mr J. R. Allison, Strathaven, exhibited one pot *Lilium auratum*, which was without exception the finest plant that has ever been exhibited in Glasgow. It bore between fifty and sixty expanded blooms. He obtained the first prize. There was a splendid show of Dahlias. Gladioli were a special feature in the exhibition, and the numerous spikes exhibited called forth the admiration of every one. Hollyhocks were a fair show. The flowers, however, had mostly been damaged by the recent heavy rains, and as a consequence they had not so showy an appearance. The first prize was carried off by Mr George Barrie, gardener to Mr John Henderson, Edinburgh. A fine collection of stove and greenhouse plants was exhibited by Mr Bullen, of the Botanic Gardens. The stove and greenhouse plants entered for competition were numerous, and of a tolerably good quality. Some beautiful models were exhibited, which displayed a considerable amount of ingenuity and artistic skill in the construction. A model of Ballochmyle viaduct, on a scale of one-twelfth of an inch, was much admired. There were upwards of 6220 everlasting flowers used in adorning the model. Another model—that of Sir Walter Scott's Monument—was surrounded by no fewer than 10,000 everlasting flowers. The vegetables were, as on former occasions, exhibited in the galleries which surround the bazaar, and the Leeks, Turnips, Carrots, and Cabbages, notwithstanding the severe drought which was experienced at the beginning of the season, were fully equal, both in point of size and quality, to any that had been shown on previous occasions. The room adjoining the City Hall was set apart for the fruit. A splendid basket of fruit was exhibited by Mr D. Mathieson, Tulliallan Castle, and carried off the first prize.

It may be mentioned that the entries numbered 1400, there being no fewer than 230 exhibitors. The weather was of the most favourable description, and the turn-out of visitors was large—indeed, shortly after two o'clock standing-room was hardly to be obtained in the passages. Lady Boswell's (of Auchinleck) brass band was in attendance, and during the day and evening played selections of popular music.



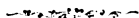
ROYAL HORTICULTURAL SOCIETY OF ABERDEEN.

THIS Society held a grand exhibition in conjunction with the exhibition of the Highland and Agricultural Society in Aberdeen on the 28th of July and three following days. The plants, fruit, and cut flowers filled a splendid new marquee, 200 ft. by 40 ft., made by Edgington of London; the vegetables were accommodated under wooden sheds; and the collections of new and rare plants by nurserymen were shown in a model greenhouse exhibited by a local builder of hothouses.

As a whole, the exhibition was the best, as far as plants went, that we ever saw at the same season of the year in Scotland, and highly creditable to the gardeners of the northern counties of Scotland. The foliage plants, Lycopods, Fuchsias, and Ferns, were quite remarkable for their excellence, and quite equal to anything we ever saw before anywhere.

The vegetables were also of great merit, considering the dry season. The weak point of the show was the fruit, except Strawberries, which were abundant and very fine; but Aberdeen is the country of Strawberries. The public market at the date of our visit was groaning with them.

There were some collections of plants that we would like to refer to more specially, but in doing so we would leave others nearly as good unnoticed; therefore we give no names at all, as our space forbids that we should give a detailed account of such gatherings. Suffice it to say that the whole affair was most creditable to the managers and exhibitors, and we have reason to believe that it was thoroughly appreciated by the public.

**BISHOP-AUCKLAND FLOWER-SHOW.**

As a show, this was as great a success as ever; and if the attendance was somewhat less, the threatening aspect of the morning may account for it. The fruit was in large quantity, and specially fine. The Grapes from Raby Castle, grown by Mr Westcoats, were very fine, who took the first prizes in most of the classes; his Muscat Hamburg was finely finished. Pines, on the whole, were beneath the mark. A fine fruit of Antigua Queen was shown by Mr Dale, Brancepeth.

In plants, though Mr Baines, Cheshire, carried away the principal prizes, it is quite clear, if he means doing so again, he must appear with something better. His collection of fine-foliaged plants contained a beautiful *Verschaffeltia splendida*.

The show of Zonale Geraniums was large, and all exceedingly well done. Those of Mr Routledge, Howlish Hall, were pictures of health in foliage and strength of spike and sheets of bloom. Leonidas in this collection was conspicuous for its immense individual blooms. We made note of James Veitch and Vestal as being distinct and desirable varieties; and if Glow tells as well in a bed as it does in a pot, it will be a grand bedder. Mr Hardisty came in with a good second lot. Mr Hardisty, Auckland Castle, also showed some bunches of Chasselas Musque Grape, quite perfect and in fine condition.

Some good collections of Tricolor Geraniums were staged; these, we think, are really fine-foliaged plants. The flowers, therefore, should be kept off them, as indeed their few ragged flowers actually spoil their effect. To bring out their

exquisite colouring to perfection should be the aim of the cultivator. The collection of Mr Routledge, Howlish, was decidedly superior in this respect.

Some extraordinary examples of cultivation were staged in the Cottagers' Class. The Fuchsias of Mr Moor, Bishop-Auckland, and the Balsams by the same exhibitor, were beyond all praise. Fancy the latter, in 12-inch pots, 4 feet high, and the same through, with dense green foliage over the pot, and studded with flowers at every leaf, and to all appearance not a seed-pod or old flower had been picked off; the Fuchsias done in the same style. We felt small while admiring them, and so did some of our brethren, we suspect.

The Auckland Society are fortunate in having such a romantic and spacious park in which to hold their shows, and in being in the centre of an immensely populous district. And great credit is due to the committee in bringing together regularly such a treat for horticultural eyes, and the most choice music for the ears of those who can appreciate it; and, finally, such an ample bill of fare for the comfort of the inner man.

THE SQUIRE'S GARDENER.



ROYAL CALEDONIAN HORTICULTURAL SOCIETY'S SHOW.

September 2.—This was by far the finest display of fruit that has been made at any of the ordinary autumnal exhibitions. Pines and Grapes were, upon the authority of Mr Meredith of Garston, by large odds finer than at the Crystal Palace the week previous; while Peaches, Nectarines, Apricots, Melons, Apples, and Pears were remarkably well represented.

Foremost among the contributions were those from Mr Meredith himself. His Black Hamburg Grapes were perfect models of cultivation; they captivated everybody, and enhanced even his renown as a cultivator. He was first in the one-bunch class, in that for bloom, and in that for the collection of six kinds, where at least four distinct varieties were in demand. The latter was the leading prize of the day, and brought out quite a host from various parts of the country. In addition to three samples of Black Hamburg, Mr Meredith showed Foster's Seedling, Chaptal—a Grape of something the same form and colour as Foster's—and the Muscat of Alexandria. These latter three, although good, were by no means fit companions for the Hamburg. Mr M'Connachie, gardener to A. Smollett, Esq., Cameron House, Dumbartonshire, showed very creditably in this section.

In the single-bunch contest for Black Hamburgs there were, in addition to Mr Meredith, Mr James Mitchell, Mr Wm. Neill, gardener to Mrs Erskine Wemyss of Wemyss Castle, Mr Turner, and Mr A. Foggo. Of Muscat of Alexandria there were some good Grapes from Mr J. Thomson, gardener to James Pringle, Esq., Torwoodlee—and Mr James M'Connachie, who had much the largest bunches, but scarcely so large in berry as his fortunate opponent—both samples being pretty well finished. In some of the contributions—and there were numerous entries—the samples were far from being ripe, and it seemed a sacrifice to cut them. The heaviest bunch was exhibited by Mr John Laing, gardener to R. Cathcart, Esq., Pitcairrie, in the shape of a White Nice, of from 7 to 9 lb. weight; and the next in weight came from Mr Wm. Melville, Glenlee—it was the Syrian. Black Alicantes were really beautiful in form and finish from Mr Wm. Melville, and from Mr G. Greig, gardener to Wm. Christie, Esq., Greenpark; indeed, so fine was the latter sample, that it ran Mr Meredith's prize Hamburgs narrowly for finish and bloom.

The best-flavoured White Grapes were shown by Mr M'Kay and by Mr W. Neill—in both cases Muscats; while in the black-coloured sorts Mr John Laing and Mr Mackay took positions with red-coloured Hamburgs against a numerous lot of the most inferior dishes contributed. In the "any other Grape class" Mr Mackay had fine-coloured Canon Hall, which took first position, Mr M'Connachie following with beautiful Black Prince; while Mr Laing and Mr Dougall, gardener to Hugh Morton, Esq., Belvidere, had the best among dishes not placed.

Mr Thomson, gardener to the Duke of Buccleuch, Dalkeith, had a first-class certificate for a moderate-sized bunch of Golden Champion, well up in shape and size, while the colour, which was really a point upon which much difference of opinion existed, was almost all that could be desired. Mr Standish exhibited Royal Ascot in small bunches, but in fine condition as to bloom. There were four bunches in three different stages, as signified by the following labels: "First crop from late house," "Second crop in second growth from early house," "Third crop in third growth from early house." These bunches were attached to the canes upon which they had been growing. The judges, after having examined them, declined to award a certificate, upon the plea that they were not satisfied that it was a first-class Grape. Mr Melville, Dalmeny Park, also had samples of some seedlings, but they were so green and poor in bunch as to excite anything but favourable attention.

In the collection of twenty sorts of fruit Mr William Thomson had a splendid array, neatly put in a large square shallow box of irregular-sized divisions to suit the fruit, the whole lined with pale-green paper, and having an admirable effect. At the back were two first-rate samples of the Prince Arthur and Smooth Cayenne Pines, flanked with a beautifully netted Melon, unnamed; then Golden Champion, Muscat, Lady Downes, and Hamburg Grapes, Royal George and Noblesse Peaches, charming fruit of the Balgowan Nectarine, the fine ruby-coloured Astrachan Apple, Jargonelle Pears, such beautiful Morello Cherries for size and colour as would be hard to beat anywhere; then Jefferson and another sort of Plum, Red and White Currants, fruit of the Psidium Guava and Monstero deliciosa to the bargain. Mr M'Kay, The Glen, had the only other group of twenty, which was awarded a second prize, although vastly inferior to the prize collection. In the class for sixteen sorts there were several excellent contributions. Mr Donald Matheson, gardener to the Hon. Mrs Villiers, Tulliallan Castle, had a splendid assortment of uniformly fine fruit. These were arranged in circular chip baskets, garnished with leaves, and, upon the whole, put on a very pleasing appearance. In the centre was a large dish of very finely finished thoroughly mature Hamburg grapes; Canon Hall, and White Crystal, a supposititious name—the variety is a greenish-white transparent Grape, introduced from the Continent. On either side of these were large fruit of a green-fleshed Melon, surrounded with a lot of Queen Anne's Pocket Melon, which, with its ruby ground colour banded with yellow, lightened up the corners very effectively; then, magnificent as to size and colour, samples of Royal George and Barrington Peaches, Violette Hative and Hunt's Tawny Nectarines—the latter a good-sized fruit, and of excellent flavour, as docqueted by the grower, and by Mr Knight, who cultivated it at the Chateau de Pontchartrain; Kirke's Purple Gage and Victoria Plums, Moorpark Apricot, Brown Ischia Figs, and Morello Cherries. Mr Temple, gardener to Mr Edwards of Balbirnie, had also a very fine contribution, comprising, among other things, good Grapes, excellent Peaches, particularly Noblesse and Bellegarde; good brown Turkey Figs, splendid Fastolf Raspberries, and Jefferson Plums. Mr John Brunton, gardener to Sir David Kinloch, Gilmerton, had a good lot also.

Very excellent fruit of both Queen and Smooth Cayenne Pines came from Mr

Foulis, Fordei House, Inverkeithing, and good fair fruit from Mr Mackay, The Glen. Melons were a large exhibition, but as a rule were very inferior in flavour. A Persian White-flesh from Mr Neill beat by odds everything against it, Mr Brunton following, out of about a dozen others; while in Red-flesh Mr J. Harper, gardener to Dr M'Pherson, Lauriston Castle, and Mr William Laing, gardener to Sir J. Cox, Kinellan, were the more successful. Figs were a large exhibition, the best coming from Mr Cave, gardener to Captain Hope, Luffness, with a sort very like the Castle-Kennedy, which has been growing there for the best part of this century, along with Malta, Brown Turkey, Black Provence, and a French Fig. Mr James Gordon, Gardener to A. Wauchope, Esq., Niddrie, had a fine lot. Apricots from Luffness were good, notwithstanding that the hot season has advanced their maturity so much as to be difficult to keep them back even for the first week of September. Mr Turner and others had contributions—all good. Plums were extra in quality, the best in groups coming from Mr William Kirkpatrick, gardener to Lord Abercromby, Airthlie Castle, and from Mr James Mitchell. Such sorts as Greengage Washington, Magnum Bonum, Kirk's Seedling, Golden Gage, Jefferson, &c., were extra prominent. Peaches and Nectarines were much finer, as a rule, than we have ever seen them in Edinburgh, and no less than twenty growers competed one against another. Mr J. Cumming, gardener to the Earl of Wemyss, Amisfield; Mr Cave, Luffness; Mr Matheson, and Mr Turner, had the winning labels attached to their cards. Mr Laing, and Mr M'Farlane, gardener to Sir R. Hay, King's Meadows, were also successful with sorts already named above. Jargonelle Pears were beautiful, and the kitchen and dessert Apples were as good in point of quality and colour as though they had been gathered from the sunnier and warm spots of South and West Anglia. The most striking kitchen Apples from Mr Cumming were Summer Codlin, Lady Wemyss, and Luffness Matchless; while Mr Mitchell had Blenheim Orange, Warner's King, and Lord Suffield. The best dessert sorts came from Mr Pow, gardener to James Melville, Esq., Hawley, and from Mr Mitchell; Devonshire Pippin, Thorne Pippin, and Oslin were beautiful.

The plant department of the show was poor. The most meritorious plants were a couple of specimens of *Vallota purpurea* from Mr Currie, gardener to William Nelson, Esq., Salisbury Green. They had been grown on freely into good-sized pots without breaking up the bulbs, and each plant bore upwards of thirty fine heads of bloom. Mr M'Kay had a good assortment of foliage plants. The *Pelargoniums*, as a rule, deserved censure, owing to the hideous mode of tying the branches down to hoops, like table-training in fruit culture. The judges very properly passed them over, awarding the prize to natural-grown plants.

Florists' flowers were limited in numbers, but very good. The *Gladioli* from Downie & Co., and from Stuart & Mein, Kelso, were superb, containing many excellent sorts. The first collection was tied to box rails in a slanting position, to accommodate the eye of the sightseer, and spikes shown with their own foliage; that of the latter was divested of the leaves, and *Asparagus* foliage substituted: this invasion had a grace about it to the untutored eye, but most people preferred the natural style.

Dahlias were a good feature, the Messrs Downie, as usual, "walking over." Mr Jones, gardener to Captain Boulton, and Mr J. M'Kean, gardener to Mrs Gibson of Duloch, Inverkeithing, had splendid stands.

Hollyhock spikes were not at all equal to the display of former seasons.

Certificates were awarded to *Pelargonium* Lady H. Wedderburn, a variegated tricolor, having very fine flat leaves, with most distinct zone and belting, with the additional attraction of a compact habit. *Victoria Tartan*, from the same exhibi-

bitor, was very like the colour of the fabric bearing the name ; it was in too small a state for censorship, and notice was given to see it again. A first-class certificate was justly awarded to one of the largest and fullest seedling Hollyhocks we have ever seen ; it came from the Rev. G..Hawke, Willingham Rectory, Gainsborough, and was named Willingham Rival. It is of the most beautiful Primrose colour, and faultless in outline and form. Certificates were also awarded to seedling Gladioli, Sir Ronald E. Errington, of extra-fine spike, and flowers large, shaded rose and pale yellow ; William Thomson, a good spike of ruby flowers, but thin in substance and scarcely meriting a first-class position ; John Downie, a good violet and rose shaded, showy, but a little rough in outline ; John Stewart, pale rose, very large flower, not quite up to the mark in form. A first-class certificate was also awarded to Zonale Pelargonium Alexander Stewart, after the character of, but considered a beat upon, Lord Derby.

A White Cucumber of large size came from Mr Brunton. A good dwarf sugar-loaf form of Cabbage, from Lamont & Mitchell, found favour. Vegetables were a large and a good display.—*From Gardeners' Chronicle.*



THE GRAND FLORAL FETE IN THE BAXTER PARK.

THIS grand exhibition, which was opened yesterday in the Baxter Park, more than justifies our anticipatory notices of yesterday and Friday last. We recommend the people of Dundee to visit it in crowds, for it is stated by those who have been over the country that there has been no show like it in Scotland. In point of quantity it falls short, as we expected, above one-fourth of that shown last year ; but in quality and general excellence it not only far exceeds last year's display, but, in the estimation of many well-qualified judges, exceeds every exhibition held in Scotland this season. Several good judges held that for gorgeousness of bloom, purity of colour, and fineness of shape, the flowers in several departments excelled the show in the Crystal Palace. Be that as it may, our readers can to-day and to-morrow judge for themselves as to the comparative merits of this and previous exhibitions in Dundee. None can say that there was ever so successful a display of flowers in Dundee. The most notable and remarkable feature of the show—and this is patent to the commonest observer—is the effulgence of the Gladioli, Dahlias, Cockscombs, Lilliums, and Geraniums. The Begonias are peculiarly fine, while the Caladiums have excited quite a sensation among professionals and amateurs. They ought to be seen and inquired after by visitors, as it may be long before such an impressive sight in leaves can be got together again. They are quite a study. The Ferns—native and foreign—constitute a very interesting feature. The Lycopods, which in previous exhibitions had only a subsidiary position in hanging baskets, bouquets, and fern-cases, have on this occasion been exhibited in competition with fine effect ; and the Adiantum, or Maiden's Hair Fern, has proved quite a treat to every lover of Ferns. In stove-plants the show is rather inferior. The Hollyhocks, Roses, Pansies, and Carnations are very good, though inferior to last year's. The Asters, we dare say, are equal to any shown before. The really best twelve has not got a prize. A twelve has got a prize very likely because it embraced variety ; but as variety of colour was no element for the judges to consider, the awarding of a prize to a really inferior twelve is a blunder. The exhibitor of the best twelve has in his

vexation removed his card from the box, but a sympathising lover of Flora has placed an envelope with "Excelsior" upon them. Those interested can examine the Asters, and we have no fear that they will hold that Excelsior deserves a prize.

In Herbaceous Blooms the show is very poor in point of numbers, poorer in quality and in style of showing them. One of the eight which obtained a prize was much commented on by those who were able to judge. By the rules, every flower should be on a single stem; but in the case of the prize referred to, a gentleman took out the flowers and found several stems, in every case bound together by a ligature of matting, thus putting the other competitors who have followed the rules to a great disadvantage. As we are criticising, we may as well remark that the decision of the judges in the case of "six British Ferns," class 12 (amateurs), has given great dissatisfaction. It is clear that bulk has gained the prize over quality. Some people demur to Ferns being left to the judgment of gardeners, and consider that they should be intrusted to amateur Fern-fanciers. Floral devices, though much run after by the many, are never looked on with favour by true lovers of Flora. The four specimens on view, though garish enough, have many of the faults and blemishes of the order device. The best portion of the first prize is in the interior, which is not well seen. No. 2, though on a square and stiff pedestal of crushed asters, is in our opinion the best, while No. 3 is unfinished in effect. When men pull leaves and petals to pieces for the purpose of battering them on timber and pasteboard, they are taking flowers from their legitimate purpose. Cuttings of coloured paper and calico would answer every whit as well, if not better, than flowers for such a purpose. The garland and festoon style of device, which admits of the display of the individual flowers composing the same, is fair; but the introduction of timber, pasteboard, and glue, and the destruction of the flowers, is truly floral vice, and ought to be discouraged. The hanging baskets, as exhibited in the main marquee, are far too heavy, clumsy, and unnatural. There is no appearance of basket about them. They hang like a ponderous clod, clumped or matted with foliated or flowering plants. Some of these, to be sure, are naturally and beautifully blended; but one feels as if they would be more comfortable if they were sitting instead of hanging baskets. The hanging basket should be light, graceful, and aerial—a fit and beautiful object for a drawing-room.

The display of dinner-table decorations and dinner-table bouquets is very rich and greatly admired. The bouquets of natural flowers are a failure. Several of them have cultivated flowers introduced, and all of them stultified by the stiff and ludicrous canons of taste which we condemned last year. There is no possibility of justice ever being done our native Flora while the Pope's head-brush shape of bouquet obtains as orthodox. The Queen of the Meadow, the self-head Foxglove, "Our Lady's Bedstraw," and St John's Wort, are all shaved close as the Yarrow, as any one can see. Unless the forms of the flowers are to be shown, it is quite preposterous to offer prizes for our native flowers. Our strictures last year on this point were warmly approved of by such judges as Professor Balfour and Mr J. M. Stark of Edinburgh; and we know full well that the botanists and lovers of wild-flowers generally have condemned this unnatural style of bouquet. In the Alpine plants the decision is quite correct. Mr Edward Moir's Thirty is truly the first. There are several interesting gems in his Thirty which have excited the admiration of botanists. We are glad to notice that Mr Richmond won the second prize for his Clova Thirty.

Messrs Laird & Sinclair, nurserymen, contributed largely to the general display, as well for competition as for exhibition. Amongst the former we noted the

following as standing out prominently, and worthy of special mention: Exotic Ferns—*Gymnogramma Laucheana* and *Lomaria Gibbii*, the former interesting from its beautiful golden fronds. British Ferns—*Aspidium filix-mas cristata*, or Tassel Fern, which was remarkable for its size and beautiful development of the fronds; *Scolopendrium vulgare crispum* and *ramosum multifidum*, elegant and rare forms of our common Hart's Tongue; and specially a large specimen of the now almost extinct native species, *Asplenium fontanum*. The Lycopoda, a closely allied genus to the above, for which this firm gained first prizes, attracted great attention; and amongst them we observed the graceful *Selaginella denticulata* in its variegated form, and also the same plant in its normal state, grown as a pyramid. The Fern-case with which they gained the second prize was filled with the varieties calculated to succeed best under such treatment, and was instructive to our lady friends, who are apt to err in the selection of kinds suited for Fern-case culture. The Ferns and Lycopods bore testimony to admirable management and careful cultivation; and though we have singled out a few as worthy of special remark, all the specimens staged for competition by Messrs Laird & Sinclair were perfect in their way. Among the Japan plants, to which the first prize was deservedly awarded, we noticed the graceful *Thujopsis dolabrata*, the *Retinispora plumosa*, and *Teptocluda*, and *Eleagnus japonica variegata*—all recent additions to our hardy plants. The handsome Conifers which lined the approach to the principal marquee embraced the collection with which Messrs Laird & Sinclair obtained the first prize. Considerable attention has of late years been bestowed upon dinner-table floral decorations, and the entries for this prize were all meritorious; but that exhibited by Messrs Laird & Sinclair, and to which the judges awarded the first prize, was admitted on all hands to be worthy of the honour. On quitting the large marquee and entering the second tent, our attention is arrested by the magnificent display of stove, greenhouse, and hardy plants, filling the entire side of this tent, and which does great credit to the enterprise of this firm, and which we regret our space only allows us to notice the following: *Maranta zebrina*, *Caladiums* of sorts, *Dracenas*, Countess of Kelly and Gloire de Nancy *Geraniums*, *Yucca aloefolia variegata*, *Lomatia polyphylla*, *Ligustrum japonicum variegated*—an interesting addition to our hardy variegated Evergreens, variegated Bramble, *Ligularia*, variegated *Retinispora squarrosa*, and the new Japan *aucubas*—in fruit beautifully coloured for this period of the season. Nor must we omit to mention the superb specimens of scarlet *Geraniums*, which evidently would have held their own had Messrs Laird & Sinclair staged them for competition.

Messrs Stewart & Son exhibited largely, but we must defer noticing theirs till to-morrow.

The fruits and vegetables are a show of themselves. One small tent was occupied by Mr Sibbald, of Drumgeith, with exhibition of Wheat, Barley, and Oats, and many varieties of Potatoes. Two stalks of Indian Corn (*Zea cwzko*), exhibited by James Spence, Esq. of Coventry Bank, some 13 feet in height, attracted no small attention. Altogether, the show is one which all interested in flowers should see. The weather was not propitious. There was a large and fashionable influx of visitors.—*Dundee Advertiser*.



THE SOUTH EDINBURGH HORTICULTURAL SOCIETY.

THIS Society held its last exhibition for the season in the Drill-Hall, Lothian Road, on Saturday, the 19th of last month. The display of fruit, flowers, and vegetables was highly creditable, and the building in which it was held a very commodious and suitable one; but the day was very unpropitious—the wind a gale, and torrents of rain falling during the whole day.

Amongst the fruit we observed two excellent bunches of Black Hamburg Grapes, shown by Mr J. Kennedy, St Margaret's; the same may be said of a like exhibition from Mr Ewing, Colinton Road; these had their awards in the order in which we have named them. Mr Greig, gardener to Mr Christie, Greenpark, was first with very good Muscats; and Mr Grieve, Braeside, second. Fine Peaches came from Mr Greenfield, Falconhall; and Mr Gibson, Edmonston. Mr Brown, watchmaker, Salisbury Road, showed three good bunches of Black Hamburg Grapes, grown by himself in a small vinery attached to his dwelling-house in the town—proving that amateurs may grow good Grapes in the centres of our great cities.

The collections of eight sorts of fruit were very good. That shown by Mr Greenfield, gardener, Falconhall, contained two sorts of Grapes, one of Peaches, one of Apples, one of Pears, one of *Passiflora edulis*, one of Nectarines, and one Melon. Mr Gibson's was a good second. One of the finest Melons we have tasted this season came from Mr Greig, gardener, Greenpark, and got the first prize. Mr Kennedy, who got second, had a fruit also of great excellence. Apples were numerous and good.

The collections of plants were creditable, though not deserving special notice. The training of the Fuchsias was by far too formal.

Messrs Downie, Laird, & Laing showed a splendid stand of Dahlias, eighty-four in number; the size of the blooms was the subject of general remark. Messrs Lawson, Handyside, and Davidson, and Drummond Brothers, exhibited collections of plants.

We fear that in consequence of the dreadful state of the weather the show would prove a failure financially. The managers may, however, congratulate themselves that they held it in a substantial building, and not under canvass.

**Notices to Correspondents.**

W. A.—We have read the article you refer to in the 'Chronicle' of the 12th of September, and we are quite of the writer's opinion that much good might come of such a scheme as he proposes. For our own part, we would prefer a dinner to a congress; few have the time or patience to be bothered with the latter, and we see no danger of a recurrence of the St Martin's Hall scene: that was purely the result of a very unfortunate set of circumstances. The speakers were all placed at one end of a large hall—those at the other end could not hear them, and got impatient, and broke up into small coteries of their own. The noise, which was the result of this, made it less possible to hear what was said from the chair, and the result was the confusion you refer to; but such can easily be avoided by judicious arrangements.

In compliance with the request of our correspondent we give the list of the Dahlias shown in Messrs Downie, Laird, & Laing's collection at the Glasgow exhibition last month: 1, Miss Henshaw; 2, Harriet Tetterell; 3, Vice-President (best Dahlia in the room); 4, Autocrat; 5, Criterion; 6, J. Dunnington; 7, Leah; 8, Lord Palmerston; 9, Hebe; 10, Princess of Wales; 11, Mrs Boston; 12, Golden Drop; 13, Gazelle; 14, Mrs Dodds; 15, George White; 16, Tiffany; 17, High Sheriff; 18, Bullion; 19, Delicata; 20, Beacon; 21, Mdle. Nilsson; 22, British Triumph; 23, Valentine; 24, Samuel Naylor.

TO THE EDITOR OF THE 'GARDENER.'

SIR,—Can you or any of your able correspondents inform me what day the Mushrooms were produced that were sold in large quantities at a cheap rate in the Edinburgh market last winter? A lady who told me of the circumstance of their being so plentiful and cheap, said it was reported that they were grown in conjunction with forced Seakale and Rhubarb, but had no idea of the mode.

R. M.

[Will any of our correspondents who may be conversant with this subject give the information required?—ED.]

J. W.—You puzzle us when you ask how many plants can be struck from one good Geranium with every necessary appliance from the month of August to October inclusive,—so much depends on the variety. If it is one that makes many small shoots, the number may be six times as many as from one that makes strong thick shoots, but few of them; or whether the sort is a free or shy grower. We could take one variety and make six times as many of it as of another, which, to the unpractised eye, might seem no way dissimilar. In these circumstances, you will not expect us to reply to your query.

W. M.—This has been a season exceptionally favourable to the production of red-spider. The very weeds were covered with this pest in parts of the country where the soil and subsoil are dry. If you syringe your Grapes regularly, you may keep the spider in check, but the chances are against your having a fine bloom on your Grapes; and unless your water is very pure, you will have a deposit of some sort on the berries. Let us advise you next year to cover your borders with 6 inches deep of cow-dung, and over this spread an inch or so of loam. If the summer is anything like as hot and dry as last, give occasional heavy waterings. This will keep the leaves of the Vines full of sap; and, strange as it may appear, the spider does not like to live on a healthy crisp leaf—he attacks the sapless and flaccid leaves first. You say sulphur has proved no specific this summer; we agree with you; the heat was so great that ventilation had to be almost constant, and the gas from it escaped and did not affect the spider. Notwithstanding, we advise you to use sulphur on the pipes. Give them a little fresh once a-week from the time the Grapes are thinned.

D. F.—We saw Mr Meredith lately, and he promised to send us berries of the Grape; when we get them we shall report upon them. Mr Prince sent us bunches of it a year ago, the only defect it had then was a lack of colour, which was accounted for by the over-cropping of the Vine.

Mr Sorely, a gardener from the neighbourhood of Liverpool, called on us lately, and while taking him through a house of Lady Downes Grapes, where the bunches and berries are both large and black, he remarked that he had that week seen Mrs Prince's Muscat growing at Garston, and that the bunches resembled those before him. If this is the case—and we see no reason to doubt it—you cannot do better than plant several Vines of it in your late house.

THE GARDENER.

NOVEMBER 1868.

THE ROSE.

(Continued from p. 418.)

CHAPTER IV.—POSITION.



HERE, is now our question, shall the rosary be? In what part of our garden shall we find the best situa— (I pause horrescent; was I about to speak of my Queen as of a cook who wants a situation!) the most worthy site for a royal throne? Some, indeed, have treated her more as a menial than as a monarch; they have sent her Majesty by lobbies and back-stairs into dismal chambers which look down on bottle-racks, and to attics where, through clattering casement, the wintry winds blow chill. And this when they should have uncovered their drawing-room damask, and thoroughly aired their best bed.

Some, having heard that a free circulation of air and abundance of sunshine are essential elements of success, select a spot which would be excellent for a windmill, observatory, beacon, or Martello tower; and there the poor Rose-trees stand, or, more accurately speaking, wobble, with their leaves, like King Lear's silver locks, rudely blown and drenched by the "to-and-fro contending wind and rain." I have seen a garden of Roses—I mean a collection of Roseless-trees—in front of a "noble mansion, proudly placed upon a commanding eminence," where, if you called upon a gusty day, the wind blew the powder from the footman's hair as soon as he had opened the front door, and other doors within volleyed and thundered a *feu de joie* in honour of the coming guest.

Others, who have been told that the Rose loves shelter, peace, repose, have found "such a dear snug little spot," not only surrounded by dense evergreen shrubs, but overshadowed by giant trees. Rest is there, assuredly—rest for the Rose, when its harassed life is past, when it has nothing more for disease to prey upon, no buds for the caterpillar, no foliage for the aphid—the rest of a mausoleum! I was taken not long ago to a cemetery of this description, which had been recently laid out; and there was such a confident expectation of praise in the pretty face of the lady who took me, that I was sorely puzzled how to express my feelings. I wished to be kind, I wished to be truthful; and the result was some such a dubious compliment as the sultan paid to the French pianist. The Frenchman, you may remember, was a muscular *artist*, more remarkable for power than pathos; and he went at the instrument, and shook and worried it as a terrier goes in at rats. His exertions were sudorific; and when he finished the struggle, with beads on his brow, the sultan told him, "that although he had heard the most renowned performers of the age, he had never met one who—perspired so freely!" Nor could I, with my heart as full of charity's milk as a Cheshire dairy of the cow's, think of any higher praise of the plot before me than that it was an admirable place for Ferns; and therefore, when my commentary was received with an expressive smile of genteel disgust, as though I had suggested that the allotment in question was *the* site of all others for a jail, or had said, as Carlyle said of the Royal Garden at Potsdam, that "it was one of the finest Fog-preserves in Europe," then, without further prevarications, I told the truth. And the truth is, that this boundless contiguity of shade is fatal, and every overhanging tree is fatal as an Upas-tree, to the Rose. As Ireland has been said to be too near a great country ever to achieve greatness for itself (I do not myself attribute its humidity or its indolence, its famines or its Fenianism, to the vicinity of England); so the Rose, in close proximity to a forest-tree, can never hope to thrive. In a twofold sense it takes umbrage; robbed above and robbed below, robbed by branches of sunshine, and by roots of soil, it sickens, droops, and dies.

These regicides were none the less correctly told—both those who kill by suffocation, and those who starve our Queen to death—that the Rose must have a free circulation of air, and likewise repose and rest. The directions may seem to be incongruous, but they can be, and must be, followed. The Rosarium must be both exposed and sheltered; a place both of sunshine and of shade. The centre must be clear and open; around it the protecting screen. It must be a fold wherein the sun shines warmly on the sheep, and the wind is tempered to the

shorn lamb; a haven in which the soft breeze flutters the sail, but over which the tempest roars, and against whose piers the billow hurls itself in vain.

And this may, I think, be taken consequently as a golden rule in the formation of a Rose-garden: so arrange it that a large proportion of your trees may have the sunshine on them from its rise to the meridian, and after that time be in shadow and in repose. To effect this, the garden must extend in longitude from north to south rather than from east to west—the form being oblong or semicircular. The western wall or fence should be high, from 8 to 10 feet; the northern tall and dense, but not necessarily so high as the western; the eastern such as will keep out cold, cutting winds, but not one ray of sunshine—say 5 feet. To the south the Rosary may be open; but even here, so hurtful is a rough wind which occasionally blows from this quarter, I prefer a mound, or bank of Rhododendrons.

Of what material should we make these boundary protecting fences? This is a question of time and of outlay. Walls are built at once, and are soon beautifully covered with Noisette and other climbing Roses; but evergreen hedges of Yew, Holly, American Arborvitæ, Berberis, Privet, and Hornbeam, are an admirable contrast to the glowing colours of the Rose, and introduce the air, subdued and softened, like respirators, into the Rosarium. But why not hedges of the Rose itself? Might we not have hedges of the common Brier, and bud them with our choicest varieties? Might we not make hedges of the Ayrshire, Sempervirens, Boursault, and Sweetbrier Rose? "I have had a hedge of *Rosa villosa* these twenty years," writes Mr Robertson, a nurseryman at Kilkenny, in 1834, "about 8 or 10 feet high, which is a sheet of bloom every May, and throughout the rest of the season flowers with the Boursault, Noisettes, and other hybrid China Roses which are budded on it." "At the Isle of Bourbon," writes Mr Rivers, quoting Monsieur Breon in 'The Rose Amateurs' Guide,'* the inhabitants generally enclose their land with hedges made of two rows of Roses—one row of the common China Rose, the other of the Red Four Seasons."

Catullus, in one beautiful line, describes the benign and gracious influences which we should seek to obtain for the Rose. He writes of a flower,

"Quem mulcent auræ, firmat sol, educit imber,"

to which the air nimbly and sweetly recommends itself, bringing the

* 'Rose Amateurs' Guide.' Referring to this excellent manual for the first time, I wish to say, once for all, that it has made more Rose-growers, and done more for the improvement of Rosaries, than any other book or books in existence.

complexion of beauty, but not visiting the cheek too roughly, which the sun strengthens but does not scorch, which the shower refreshes but the tempest spares. Such a genial home we must find, or make, for our Roses, wherein we may see them in a serene and placid loveliness, what time their unprotected sisters are withering beneath burning suns, and may admire their ample and glossy foliage when, in exposed and unfenced ground, the furious wind seems almost to blow out the very sap from the shimmering shivering leaves. Transitory, almost ephemeral, is "a Rose's brief bright life of joy,"

το ρόδον ακμαζεί βαλόν χρόνον ;

and there comes a broiling day towards the end of June, when the Rose, unshaded, is burnt to tinder, and the petals of that magnificent Charles Lefebvre, which was intended for next day's show, crumble as we touch, and are as the parsley which accompanies the hot *rissole*. Or there comes a gusty day, and lo ! that lovely bloom of Cecile de Chabillant, perfect just now in tint and symmetry, is chafed, discoloured, deformed, for want of a guardian screen. I know that in the one case something may be done by the use of those floumbras and metallic hats of which I shall have more to say when I speak of Roses for exhibition—and that in the other, strong stakes, secure tying, and low stature will do much to save ; but in both instances a natural shelter and a natural shade are far more reliable aids—far more conducive to the beauty and endurance of the Rose.

"Cease firing," I hear it said ; "you are shooting over your target and wasting powder and ball. You are talking of walls and hedges and banks—of crescents and parallelograms, as though all your readers had the wealth and the acres of Lord Carabbas. You are sermonising above your congregation—at all events enjoining precepts which they are unable to perform. You are writing for the few, and not, as you promised, for the many." But this, I must plead, is as unjust an accusation of exclusiveness as was brought against a clerical neighbour and friend of mine, a good and gentle pastor, by one of his flock, on this wise. He had been preaching, he told me, a simple discourse on the duties and privileges of a Churchman, and he was leaving the church after his people, when an old man, not aware of his proximity, turned to another veteran, as they hobbled out of the porch together, and said, "Well, Tommy, my lad, thou sees there's no salvation for nobbody but him and a few partickler friends !" He had preached, nevertheless, as I would fain write, without respecting persons, the truth for all. If I have any special sympathy, it is certainly with the poorer portion of our brotherhood ; and as I have passed through all the grades of Rose-growing, commencing with a dozen only (nay, I

well remember *the* Rose which first won my allegiance, D'Aguesseau Gallica, as a man remembers the first love-smile of his heart's queen), and gradually increased to my present maximum of 3000 (maximum, do I say? *trop n'est pas assez*; and if I had Nottinghamshire full of Roses, I should desire Derbyshire for a budding-ground), I can identify myself with Rose-growers of all denominations, and with Rose-gardens of every shape and size.

And the directions which I have offered apply equally to the small as to the larger Rosary—expose to the morning's sunshine, protect from cutting wind. Give the best place in your garden to the flower which deserves it most. In the smallest plot you may make, if you do not find, such a site as I have described. You *will* make it if you are in earnest. I have seen old boards, old staves (reminding one of the time when the Bordeaux casks made fences commonly in English gardens), old sacking, torn old tarpaulins—yes, once an old black serge petticoat—set up by the poor to protect the Rose; and there I have ever seen her smiling upon Love, however mean its offering, and rewarding its untiring service.

For the flirt, for the faint-hearted, for the coxcomb, who thinks, that, upon his first sentimental sigh, she will rush into his arms and weep, she has nothing but sublime disdain.

Of this, and before I speak upon *Soil*, let me submit an illustration.

Not many summers since, three individuals, of whom I was one, were conversing in a country house. One of my companions was about to succeed the other as tenant of the house in which we were met, and was making anxious inquiry about the garden in general, and concerning Roses in particular. "Oh!" said our host, "the place is much too exposed for Roses. No man in the world is fonder of them than I am, and I have tried all means, and spared no expense; but it is simply hopeless." "*Must have Roses*," was the quiet commentary of the new comer; and two years afterwards I met him at the local flower-show, the winner of a first prize for twelve Roses. "My predecessor," he said, "was no more the enthusiast which he professed to be about Roses, than that Quaker was an enthusiastic alms-giver who had felt so much for his afflicted friend but had not felt in his pocket. The pleasure-grounds, it is true, are too bleak for prize blooms, but in the large, half-cultivated kitchen garden, I found the most delightful corner, with an eastern aspect; put in one hundred Briers; budded them last summer; manured them abundantly this; and am now, between ourselves, and *sub rosâ*, in such a bumptious condition, that you'd think I'd made the Roses myself."

There is, alas! one locality, beneath that dark canopy of smoke which hangs over and around our large cities and manufacturing towns,

wherein it is not possible to grow the Rose in its glory; and many a time as I have stood in the pure air and sunshine among my own beautiful flowers, I have felt a most true and sorrowful sympathy for those who, loving the Rose as fondly as I do, are unable to realise its perfect beauty. Well, no man can have his earthly happiness just in the way he wills; but every man, as a rule, has his equal share, and these men, I doubt not, have other successes as solace and compensation. Nay, are not their Roses, which we, more favoured, should regard as disappointments, successes to them, great and gratifying? If Mr Shirley Hibberd, for example, whose "*Rose Book*" I especially commend to urban and oppidan amateurs, can grow good Roses within four miles of the General Post-Office—and I have seen the proofs of his skill and perseverance at one of the great London Rose-shows, to my high surprise and delectation—it is quite certain that he would be *nulli secundus* with the full advantage of situation and soil. Nor do I hesitate to say, that the collection to which I refer, necessarily less perfect than those around it in colour and in size, seemed to me the most honourable of all.

What can I offer, besides the hand of friendship and the praise of an old Rosarian, to these brave brethren of the Rose? I subjoin for them a list of those varieties which are, in my opinion, most likely to repay their anxious care. Let them be planted in the best place and in the best soil available, avoiding drip and roots. Let them be manured in the winter and mulched in the spring. Let them be well watered below and *well syringed above*. Let grubs and aphides be removed, and sulphur applied as soon as mildew shows itself.

LIST OF ROSES FOR SUBURBAN GARDENS.

For Walls.—Gloire de Dijon, the Ayrshire, Sempervirens, and Boursault Roses.

Of Summer Roses.—The Common Moss, the Common Provence or Cabbage; La Ville de Bruxelles and Madame Hardy, Damasks; Boula de Nanteuil and Kean, Gallicas; Brennus and Blairii 2,* Hybrid Chinas; Charles Lawson* and Paul Perras, Hybrid Bourbons.

Of Autumnal Roses.—Auguste Mie, Comte de Nanteuil, General Jacqueminot, Jean Goujon, Jules Margottin,

La Reine, La Ville de St Denis, Leopold I, Madame Boll, Madame Boutin, Madame Clemence Joigneaux, Madame Victor Verdier, Maréchal Vaillant, Marie Beauman, Madame Charles Wood, Pierre Notting, Sénateur Vaisse, Souvenir de la Reine d'Angleterre, Hybrid Perpetuels; Armosa, Queen, and Souvenir de la Malmaison, Bourbons; Aimée Vibert and Grandiflora, Noisettes; Mrs Bosanquet and Cramoisié Supérieure, Chinas; and Gloire de Dijon and Souvenir d'un Ami, Teas.

S. REYNOLDS HOLE.

* Blairii 2 and Charles Lawson must not be too shortly pruned. Cut out the weakly wood, and leave 8 or 10 "eyes" on the vigorous branches.

TO BUYERS OF ROSES.

As November is *the* month for purchasing and planting Rose-trees, and as many readers of the 'Gardener' may be glad of advice from one who has had long experience, I submit herewith three selections from the catalogues recently published.

The first comprises a complete collection of the best Roses in cultivation, both for the general beauty of the Rosarium and for exhibition. The cost, taking half-standards as the size to be preferred, would be about ten guineas.

The second would form the basis of an excellent Rosary, including all varieties *de la première qualité*. The cost, half-standards, would be about £5.*

The third is *the* dozen which I should desire, if I might have twelve only; the cost would be 18s.

No. 1.

Moss.—Baron de Wassenaer, Common, White Bath.

Damask.—La Ville de Bruxelles, Madame Hardy, Madame Zoutman.

Alba.—Princesse de Lamballe.

Gallica.—Kean, Œillet Parfait, Ohl.

Hybrid China.—Blairii 2, Juno.

Hybrid Bourbon.—Charles Lawson, Coupe d'Hébé, Paul Perras, Paul Ricaut.

Austrian Brier.—Persian Yellow.

Banksian.—White, Yellow.†

Ayrshire.—Dundee Rambler, Ruga.†

Boursault.—Amadis.†

Sempervirens.—Adelaide d'Orleans, Félicité Perpetuelle, Myrianthes, Ram-pant.†

Hybrid Perpetual.—Alba mutabilis, Alfred Colomb, Anna de Diesbach, Auguste Mie, Baronne de Rothschild, Baronne Prevost, Beauty of Waltham, Camille Bernardin, Caroline de Sales, Centifolia Rosea, Charles Lefebvre, Charles Rouillard, Charles Verdier, Comte de Nanteuil, Comtesse de Chabillant, Comtesse de Paris, Duc de Cazes, Duc de Rohan, Duchesse de Caylus, Duchesse d'Orleans, Duchess

of Sutherland, Duke of Edinburgh, Duke of Wellington, Empereur de Maroc, Eugène Verdier, Exposition de Brie, Fisher Holmes, François Lacharme, General Jacqueminot, General Pelissier, Gloire de Santenay, Gloire de Vitry, Hippolyte Flandrin, Jean Gougou, John Hopper, Josephine de Beauharnais, Jules Margottin, La Reine, Laurent Descourt, La Ville de St Denis, Leopold Hausburg, Leopold Premier, Le Rhone, Lord Clyde, Lord Herbert, Lord Macaulay, Lord Raglan, Louise Peyronney, Madame Boll, Madame Boutin, Madame Caillat, Madame Charles Crapelet, Madame Charles Wood, Madame Clemence Joigneaux, Madame Derreux Douville, Madame Fillon, Madame Furtado, Madame Masson, Madame Moreau, Madame Rivers, Madame Victor Verdier, Madame Vidot, Mademoiselle Bonnaire, Mademoiselle Marguerite Dombrain, Mademoiselle Marie Rady, Maréchal Vaillant, Marie Beuman, Marguerite de St Armand, Mathurin Regnier, Maurice Bernardin, Miss Ingram, Monsieur Boncennes, Monsieur de

* See page 418, line 32.

† Climbing Roses.

Montigny, Monsieur Noman, Olivier Delhomme, Pierre Notting, Prince Camille de Rohan, Prince Leon, Senateur Vaisse, Souvenir de la Reine d'Angleterre, Souvenir du Comte Cavour, Vainqueur de Goliath, Victor Verdier, William Rolliesson, Xavier Olibo.

Perpetual Moss.—Madame Edouard Ory, Salot.

Bourbon. — Acidalie, Baron Gonella, Catherine Guillot, Souvenir de Malmaison.

China.—Mrs Bosanquet.

Tea-scented.—Adam, Climbing Devonensis, Comte de Paris, Comtesse Oubaroff, Devonienais, Duc de Magenta, Elise Sauvage, Gloire de Dijon, La Boule d'Or, Louise de Savoie, Madame Bravy, Madame Falcot, Madame Willermors, Maréchal Niel, President, Rubens, Souvenir d'un Ami.

Noisette. — America, Celine Forestier, Cloth of Gold, Lamarque, Solfaterre, Triomphe de Rennes.

No. 2.

Summer Roses.—Blairii 2, Charles Lawson, Coupe d'Hébé.

Summer and Autumn—Hybrid Perpetual.—Alfred Colomb, Anna de Diesbach, Beauty of Waltham, Caroline de Sansales, Charles Lefebvre, Comte de Nanteuil, Comtesse de Chabillant, Duc de Rohan, Duchesse de Caylus, Duchesse d'Orleans, Exposition de Brie, François Lacharme, General Jacqueminot, Gloire de Santenay, Gloire de Vitry, John Hopper, Josephine de Beauharnais, Jules Margottin, La Ville de St Denis, Leopold Premier, Lord Macaulay, Lord Raglan, Louise Peyronney, Madame Boutin, Madame Caillat, Madame Charles Crapelet, Madame Charles Wood, Madame Clemence Joigneaux, Madame

Furtado, Madame Rivers, Madame Victor Verdier, Madame Vidot, Mademoiselle Marguerite Dombrain, Mademoiselle Marie Rady, Maréchal Vaillant, Marie Beauman, Marguerite de St Armand, Maurice Bernardin, Miss Ingram, Monsieur Boncennes, Monsieur Noman, Olivier Delhomme, Pierre Notting, Prince Camille de Rohan, Senateur Vaisse, Victor Verdier, Xavier Olibo.

Bourbon.—Souvenir de Malmaison.

Tea-scented. — Climbing Devonienais, Gloire de Dijon, Madame Bravy, Madame Falcot, Madame Willermors, Maréchal Niel, Souvenir d'un Ami.

Noisette.—Celine Forestier, Triomphe de Rennes.

No. 3.

Alfred Colomb, Charles Lefebvre, Comtesse de Chabillant, Duc de Rohan, Gloire de Dijon, John Hopper, Madame

Furtado,* Madame Victor Verdier, Madame Vidot,* Marie Beauman, Maréchal Niel, Senateur Vaisse.

S. REYNOLDS HOLE

A GARDENER'S HOLIDAY.

THE holiday has become one of our national institutions ; from an occasional luxury it has become almost a necessity—a periodical refresher, like our cup of tea in the afternoon. Our great working man must have his half-holiday in the week, he being now the most im-

* Mesdames Furtado and Vidot are of delicate constitution, and should be budded annually.

portant individual in the State, to whom even Prime Ministers bow down and worship. He must have the longest holiday, though it be found most expedient to eke it out to him, like his wage, in weekly doses. The thinking man gets his holiday in the lump, and fortunate is he if it exceeds the fortnight: we speak of him who gets it, not of him who can take it. We pity the man whose time is all holiday; he knows not its meaning. A holiday is a useful thing—a professional holiday, as a gardener's generally is: it relaxes the mind and body; puts us on much better terms with the world; crushes up whole petrifications of prejudices, the result of staying at home; takes the conceit out of us, or sends us home more conceited still, or at least more contented with ourselves; and if one is observant, many lessons will be learned, and valuable little hints picked up, as it were, by the very corners of one's eyes, let alone the thorough-going sight-seeing, and having one's ears open. Sometimes the "opportunity might be improved" by *giving* a seasonable hint in a doubtful case; but then that would be indelicate. We never liked advice as children, and we like it worse as men. The adviser for the time assumes a superiority. Many a poor life has been lost through what is called doctors' etiquette, and many a poor plant through something analogous. A holiday, to be real, must be a new life for the time; the cares of home must be entirely left behind, and no anxieties of purse or person must fret the mind. In such mood we started on our holiday, on rather a foggy raw day, with the intention of making a rush for Manchester, through the smoke of Leeds and West Yorkshire, a tract of country enveloped in stythe and impure air, quite anti-horticultural. We hailed the old city, to which we had been a stranger for fifteen years, and although the metropolis of manufactures, found it clean as ever, like a well-ordered household. It compares favourably with cities of like magnitude in this respect, like the home of the well-paid and industrious mechanic in a dirty neighbourhood, who combats the depressing moral influence of the locality. The place of the many about Manchester is Manly Hall, almost unknown fifteen years ago. Here are thirty-five houses, mostly span-roofed, and three more about to be built, after which more will doubtless be found necessary. The conservatory is unique: the interior arranged in terraces at least 100 feet long, with flights of steps at either end; the plants arranged in sections—flowering plants on the lower, foliage on the second, Palms, Tree-Ferns, Dracænas, &c., on the third, and farther back still is rockwork, fountains, and dripping recesses, the whole interspersed with marble statuary in profusion, and most striking to a stranger. It would be impossible, from one visit, to particularise everything to be seen in this great establishment. There is the best of everything in the plant way. One house full of Gymnogrammas,

magnificent plants; the *Gleichenias* in another house, 4 to 6 feet in diameter—one, called *Mendellii*, very distinct. Heaths, Azaleas, Camellias, exceedingly fine in health and size. A fine collection of the best Orchids in course of collection at startling prices. A span-roofed fernery and stove filled with rockwork, fountains, and dripping recesses, with everything planted out—Palms, Tree-Ferns, dwarf Ferns, and all sorts of foliage-plants—with a rugged winding path down the centre for perhaps a couple of hundred feet, was the most perfect thing of its kind we ever saw. Every plant in robust health and perfect keeping. We have seen several houses of this style throughout the kingdom which have gained some celebrity, but this eclipses them all.

Mr Petch is a master in plant-growing, and means to prove his strength also as a fruit-grower, in which he is already giving good earnest. We have often been curious to know in our simplicity where all the new and fine things imported by our enterprising nurserymen went to, keeping so many able collectors at work; but a few such purchasers as Mr Mendell explains the difficulty.

From this Louvre of plant-places it is but a run to another of Grapes at Liverpool—Mr Meredith's, Garston; but so much is being said in the public prints that we can have nothing to say which has not been said before; we remarked, however, the fibrous and sharp nature of the soil used, the almost natural way the Vines are allowed to ramble and take care of themselves; observed that it is a red-sandstone district, as at Keele Hall; was struck with the grand health of all the Vines, young and old, and absence of insects; rather shocked at the thicket-like appearance of some of the vineries, and what appeared over-thick planting. There are, indeed, large quantities of extra-fine Grapes, especially Muscats, but then the whole are not above the average. We cannot be over-laudatory or hypercritical. Pince's Muscat is a fine Grape, but it must be quite ripe and well coloured to have the full Muscat flavour. What we mean is this,—the Black and White Muscat of Alexandria always are distinctly Muscat in taste even when young and in the green state. We were momentarily disappointed in tasting what was considered a rather under-ripe berry; but on tasting a blacker and better-ripened bunch, it was distinctly Muscat. It is to be hoped it will beat Lady Downes as a keeper, equal it in colour, and fruit equally free, as it is decidedly superior in taste. Lady Downes at one time was credited with a smack of Muscat, but it does not require this complimentary assistance to its good name. We intend planting several Vines of the Pince, and extending them if they prove satisfactory.

The ancient city of Chester is interesting horticulturally, and as being the key to Wales from the north. The country round has an

Italian-like aspect, flat and rich-looking—at least what we have been accustomed to conceive of that country. The nurseries there are well worthy of inspection—those of Eaton Road especially, for evergreen shrubs and ornamental trees. From here our route lay into North Wales during the excitement of the Abergele and other accidents; but on the Cambrian Railway, by Welshpool, the situation of Powis Castle is a good beginning to real Welsh scenery. To those who have travelled through the wildest parts of Scotland, the mountains, as they are courteously called, in Wales will appear but ordinary hills. Cader Idris and Snowdon will do, but we have a dozen such in Scotland. The valleys in Wales have, however, a much more kindly and fertile appearance, the climate being more southern and the country not so elevated, the Oak plantations reaching a long way up the hills. Nothing can be more picturesque and varied than the route of the Cambrian Railway by Machynlleth to Portmadoc. Here the train rushes down a steep incline among plantations, rocks, and precipitous hills; there runs along a beautiful valley with a clear rapid river. At another time the sea washes the stone wall which supports the rails in sharp curves and tunnels. And on sweeping round Cardigan Bay the train seems suspended between the sky and the sea, the precipice being hundreds of feet above and below the line. The little town of Barmouth is Gibraltar on a small scale, the houses perched up the face of a projecting rock, the inhabitants probably getting up and down by rope-ladders—but we will not positively affirm it. Standing with our back to the sea on the viaduct across the bay, and looking inwards, we fancied we beheld the Lake of Geneva, with pleasant little villas nestling in the sinuosities of the wooded hills, with the high hills in the background to represent the Alps. Wales is rich in old castles, monuments of her greatness before the Conquest; and Harlech is one of them, the town being the capital of Merionethshire. To the lovers of scenery this part and on to Portmadoc is a rare treat. The Welsh people seem very indifferent to it; the reason may be that it has become familiar to them, and they cannot live on fine scenery, and one must be free from care to enjoy it. The Fastiniog Railway is a curiosity in its way. Though found in Bradshaw, the gauge is only 2 feet, and the line 14 miles long. The engine we saw, named “Welsh Pony,” looked like an ordinary chest of drawers set on four wheels. A single buffer is inserted in the middle of the front and end of each carriage, so that in shunting and moving the train the carriages butt at each other like sheep settling their differences. One third-class carriage was constructed like an Irish stage-car—the passengers back to back, with their legs over the wheels, all outside, with simply an awning.

We possess rather a peculiar personal build. Our front elevation, speaking architecturally, is of rather an unaccommodating aspect, and on making the experiment of occupying a first-class carriage, it became a matter of grave consideration which extremity should first enter. The feat was at last accomplished by a folding-up parallel-ruler process. The "Welsh Pony" showed its accomplishments by moving off with some forty miniature carriages, a mixed train—the whole thing exceedingly droll and amusing, mixed up in fancy with a London and North-Western train. We must explain that this Lilliputian railway is for bringing down the slates from the quarries in the hills through the low tunnels adopted in this branch of mining industry. The Welsh valleys are proverbially beautiful. The best we saw was the Corris Valley, running up to the foot of Cader Idris, and the property of Earl Vane; it is Killiecrankie on a reduced scale, with more verdure, and Oaks substituted for Pines. Here are also very extensive slate quarries, or rather mines, for the most of them are entirely under ground. At Machynlleth Lord Vane has a very pretty seat close on the Dovay river, and where gardening is carried on successfully and extensively. Vines do well on the brashy soil, as do mostly everything in those sheltered Welsh valleys. The finer French Pears do well as standards; and the flower-garden, sunk in a large panel, with a fountain in the middle, was a blaze of beauty. Forest-trees and the finer Pines and Yews attain gigantic proportions here; some Yews in the valley are quite antiquities. The Douglas Fir, nobilis, and excelsa are fine trees. Here is also a fine old conservatory, the roof covered with one aged Hamburg Vine full of well-coloured fruit.

Dinas Mowddy, the seat of Mr Buckley, a well-known Manchester man, in Merionethshire, is fast becoming a fine place under the joint efforts of Mr Anderson and his liberal master. Messrs Weeks of London have already erected extensive hothouses, and many more are in prospect. Hundreds of thousands of forest-trees are planted on the surrounding mountains every year, and every one of them grows away at once. The place is entirely shut in by steep hills, except on one side, where the valley opens downward. Complete water-works have been already laid, which can by a hose throw the water to the height of 100 feet—indeed a fountain might easily be made to beat the one at Chatsworth. The advantage of such a fine supply of water is proved by the shifting of a large Yew-tree, some 30 feet high, and 1 foot in diameter in the bole 2 feet from the ground, in the early part of this year. The tree was systematically bathed by the hose during last summer, and no one could have told that it had been so recently shifted.

Here we must stop for the present, reserving some more remarks on our holiday for another time.

THE SQUIRE'S GARDENER.

PEACHES.

To have a lengthened supply of this indispensable fruit where the glass at command is rather limited ought to be one of the principal aims of the gardener. That this object may be attained, the first consideration is a judicious selection of all the best varieties, beginning with the earliest, and planting a tree of each variety from that to the latest good sort that can be got. If this is attended to there need not be the least difficulty in having a dish of good Peaches for the table every day, from the 1st of May down to the 1st of November, from two moderate-sized houses.

Up to this year we always had three houses here for Peaches alone, and from these we were expected to supply fruit for about six months of the year; but on account of alterations and improvements going on, one of the houses had to be converted into a vinery. This left us with only two Peach-houses, and I thought I would try and make an effort to accomplish the same with them as I formerly had done with the three, and this has very nearly been accomplished. With a tree of Stirling Castle in the early house it would have been accomplished altogether.

I will premise that the houses are from 35 to 40 feet long, and that the trees in front are trained rather less than half-way up the rafter, which will allow the back-wall also to be planted. In passing I may say that this is the most economical way of planting a Peach-house, as there is more surface for training the trees in this way than any other, and every branch of the tree is exposed to the full action of the light. A house of this sort will hold three plants in the front, and a like number against the wall. We will suppose that Nectarines are also in demand, and will therefore allow two trees for them, which will leave us with four Peaches to be selected. If planting I would choose the following four—viz., one Stirling Castle, one Noblesse, one Royal George, and one George the Fourth. Of Nectarines, I would choose one Violette Hative and one Newington. If these varieties are selected and forcing commenced about the beginning of December and carried on pretty smartly, the Stirling Castle will be ready to pull by the 1st of May. As soon as the first fruits are ripe the house ought to be thrown open constantly when the weather permits; besides being the means of making the fruit ripen more slowly, and consequently extending the period of gathering, it will be found that those fruits which were ripened by this means will be much finer in flavour than their earlier brethren. The Stirling Castle will stand pulling till about the 20th or 25th of May, by which time the Noblesse will be ready, and will continue till about June 15th; Royal George will then be

ripe to keep up the supply until about the 10th of July; while George the Fourth will follow up for nearly a month. The three last-named varieties are the sorts in our early house here, and the dates at which I gathered are the ones I have affixed as the probable dates.

I have often thought that it is a popular mistake with gardeners when thinning the fruit of Peaches to select all those nearest one size. My practice is quite antagonistic to this, as I make a regular selection, beginning with those as large as Windsor beans down to the smallest I can get. By thus selecting I not only prolong the period of production, but also find that in many instances the latest portion of the crop produces the finest fruit. This stands to reason, as after the half of the crop has been pulled, if the other half is still swelling, it must undoubtedly be receiving some of the support which went to the first portion as well as all it received itself formerly.

Having shown how one house is capable of producing a supply for the first half of six months, our next duty is to show how another house may follow it up and accomplish the specified period. The selection for this house should be something like the following: one Early Mignonne, one Grosse Mignonne, one Walberton Admirable, and one Salway; of Nectarines, one Elruge and one Imperatrice. If the house is kept quite open all the year, save when weather will not permit, the Early Mignonne will be ripe by the 10th of August, and will continue up till the 1st of September, when the Grosse Mignonne will be coming in, to continue till say the 20th, to be succeeded by the Walberton Admirable, which will keep up a supply till the Salway is ripe, which will be about the 10th of October, and will continue to give ripe fruit till the beginning of November,—thus accomplishing the full period of six months during which ripe Peaches have been produced from two houses only.

The selection I have given for this house is not exactly what we have in our late one, but it is the selection I should prefer if planting, as I believe by so selecting we would evade a slight blank we generally have for ten days about the end of September. Our trees are of the following kinds—viz., two Royal George, one Royal Charlotte, and one Salway. The Royal George was ripe this year on the front of the house on the 8th of August, and from the same tree I pulled on the 1st September the fruit with which I obtained the first prize in Glasgow on the 9th. I selected these as being better fruit than those just beginning to come in upon the Royal Charlotte, and put them in cotton until required for the show, when they turned out as fresh as when pulled. The Royal Charlotte was not finished till the 25th of September, and we did not pull the Salway till the 6th of October, and could have continued pulling till the end of the month; but as the

fruit was required for a special purpose, we had to use artificial means to ripen them, and consequently they are all pulled to-day, the 15th of the month.

This is one of the very best of late Peaches; in fact, by far the latest Peach known to me, and the wonder is that it is not more generally cultivated. It is of the largest size and best quality; the only fault it has is being a little apt to crack at the stone. We do not, however, lose more than one in three or four dozens in this way. The flowers of it are rather small, and the glands of a kidney shape. When ripe the skin resembles in appearance a well-ripened King of Pippin Apple, the side next the light having a bright bronzy appearance, while the other side is of a rich yellow or orange hue. It belongs to the free-stone class, is highly flavoured, being juicy, rich, and melting, with flesh in appearance much resembling the Moor Park Apricot. Any one who may wish to plant a very late Peach I can thoroughly recommend them to try the Salway, as being one which will give general satisfaction.

JAMES M'MILLAN.

ERSKINE, 15th October.



PAISLEY PUBLIC PARK.

THAT the science of Gardening is rapidly advancing, is a proposition that we think all must admit; that its progress is a cheering sign and evidence of our advancing civilisation will, we think, be as readily admitted. What better *criteria* of the accumulating wealth of our country, and the spread of the civilising influences of refinement and culture it enables its possessors to arrive at, could we point to than the innumerable villas and mansions of our "merchant princes" which are daily springing up in the suburbs of all our large towns, surrounded with their gardens, lawns, forcing-houses, &c. &c.? They are "homes of taste," which are not only a source of pleasure to their owners, but a cheering sign of the material progress and civilisation of our land. That a period may arrive in the "good time coming," when every member of the body politic may be the happy possessor of his own house and garden, is a "consummation devoutly to be wished for," but which we may never see realised. But, failing that, we are glad to see some progress in the direction of bringing the people under the elevating and refining influence of the gardening art, in the formation of public parks and gardens within reach of denizens of our large towns.

Some of these have been purchased and laid out at the public

expense, others of them have been the free gift of generous-minded individuals, mostly belonging to the order of those whom Thomas Carlyle has aptly termed the "captains of industry," otherwise named "merchant princes," such as Sir F. Crossly of Halifax, Sir D. Baxter of Dundee, Mr Bolckow of Middlesborough, and Thomas Coats of Ferguslie, Paisley.

Mr Coats has long been known as a generous patron of horticulture, and as a liberal benefactor of the poor, and he has now crowned a long list of beneficent acts of public-spirited generosity to his native town, in the free gift to its inhabitants of the splendid Fountain Gardens, of which it is now our purpose to give a short description to the readers of the 'Gardener.'

These Gardens comprise about 7 acres in extent, and from the situation and nature of the ground it was not an easy matter to lay it out with any grand effect. But Mr Coats was fortunate in this matter in securing the services of Mr James Nevin of Glasgow, the well-known landscape-gardener, who certainly has made the most of the ground he had to work upon here, and sustained his well-won fame as a landscape-gardener. The principal entrance to the Gardens is from Love Street, where a magnificent railing, extending the whole width of the Gardens, has been erected, with a gateway in the centre of massive appearance and elegant design. On each side of the main entrance have been erected very handsome cottages, one of which is the house of the superintendent of the gardens—the other is most handsomely fitted up as a waiting-room for ladies, with lavatory, dressing-room, and other conveniences.

Further to the right have been erected a smaller building of an ornate character, as a stable for the pony to work the mowing-machines. There are also three greenhouses, each 40 feet by 14 feet, with a number of pits and frames, &c., to raise and protect the bedding plants required to fill the flower-beds and borders. The ground has been laid out in the geometrical style, and in doing so we think Mr Nevin must have had in mind the safe advice of the poet Pope—

"To consult the genius of the place in all,"

for the ground here properly admitted of no other style.

Entering the gardens from Love Street, a broad walk stretches to the farther end, where it terminates at a flight of steps, which carries one to the top of an artificial mound of a semicircular shape, raised at considerable cost and labour. The sloping sides of the mound are planted with a fine collection of Rhododendrons; on the top is a fine gravelled promenade with seats placed at intervals, and in the centre a lofty flag-staff, with the national ensign flying at

the top. Round the margin of this promenade, as a boundary, is a beautiful and costly hedge of the Queen Holly. On the right and left of the mound are the entrances to the Gardens from Caledonia Street. Descending the steps, and taking the walk to right or left running parallel with the street, we are led in either case to another mound, placed in the opposite corners of the ground, in the shape of a quadrant, the sides of which have been most tastefully arranged as a rockery, and planted with some of the finest Alpine plants and rare Ferns. Flights of steps lead to a level space on the top, where seats are arranged, and from whence a fine view of the grounds can be obtained. In a recess of each rockwork, a drinking fountain of a unique rustic character is placed, where a copious supply of "nature's beverage" is at all times at command; while, concealed within sinuous recesses of the rockery, there are placed urinals, &c.

Retracing our steps to the centre of the Gardens, we come upon the grand central fountain—a gem of art, and without doubt the finest thing of the kind in Britain. The ground basin of this fountain covers an area of 284 square yards; surrounding it is a gravel walk 21 feet wide, margined with a broad belt of grass, on which are some chaste figures, gay at present with Geraniums, Allysium, Viola cornuta, Centaureas, &c. Placed at equidistances from the grand fountain are four smaller ones, so that altogether they constitute a prominent feature; hence the name "Fountain Gardens." Upon the grass, along the side-walks, there are a great number of figures filled with a collection of the most choice modern bedding-out plants, which have a most pleasing effect; while masses of fine Gladioli, and lines of the same in the side-borders and shrubberies, are at present gorgeous with their many-coloured blooms. The collection of Rhododendrons is a fine one, as may be judged from the fact that they have cost upwards of £500, and, should they grow well, they will yet be a grand feature.

We are glad to say that the people of Paisley seem to appreciate the handsome gift, as the number of visitors daily is very considerable, and their conduct while in the grounds of the most exemplary character.

The Sunday visitors, since the gardens were opened, have averaged between 2000 to 3000, and not a single case of misdemeanour or Vandalism has occurred; and this order and good conduct is secured with the *nominal* superintendence of one policeman for a few hours in the evening,—which shows, we think, that the people of Paisley have a clear appreciation of Keats's saying, that

"A thing of beauty is a joy for ever."

And while they are realising that, and enjoying healthy recreation and

fresh air amid the surroundings of their lovely garden, we are sure that the purpose of the beneficent donor is also being carried out, for we are sure it is his wish that they may at all times realise that

“The garden yields a soft amusement, a humane delight;
And to teach the savage nature of the ground
To take the form of rustic sweet simplicity,
Is to create and give a God-like joy,
Which every year improves.”

W. E.



HINTS FOR AMATEURS.—NOVEMBER.

THIS, in most well-managed gardens, is a busy month, preparing for severe weather, which may soon be expected. The necessary protection for all kinds of plants should be in readiness. Thatched hurdles, straw-mats, boarded covers, and suchlike, are used extensively in some places for protecting vegetables, such as Cauliflower, Lettuces, and Radishes, as well as tender shrubs, Roses, and other plants. Sunk pits for protecting bedding plants in spring come in useful for protection for other things in winter. We have found a range of these pits (with rough material in the bottom, covered with coal-ashes to allow water to pass off freely) invaluable during the whole of the season: in summer they are filled with Roses, Deutzias, Lilacs, and a great variety of plants in pots, which are plunged in the ashes. In autumn many cuttings, after they are rooted, are protected in these pits till vineries and other structures are ready to receive the plants. In winter, Brocoli, Lettuce, and other vegetables find shelter from frost. Boarded covers keep off rain and about 12° of frost: a covering of litter or other material can be given sufficient to keep out any amount of frost. These pits are made by a common labourer, at very little expense. The turning-up of ground and wheeling of manure should be forwarded while the weather is suitable. Frosty mornings should be employed by wheeling and such work, which cannot be done well during snow or when the weather is wet. On a dry day choose a piece of well-sheltered ground which has been well worked and exposed to sun and air; draw drills about 3½ to 4½ feet apart (according to strength of ground), and sow Sangster's No. 1 Peas (rather thickly), or some other kind which has been well proved for early work. Chopped Furze or a dusting of red-lead may be thrown over the seed before covering in the drills, as a preventive to mice and other marauders which give much trouble in winter. In wet localities, the seed may be sown on

the surface of the soil, and the earth drawn over it. It is well to give a chance to autumn-sown Peas, where it is not convenient to raise them under protection (in turfs or boxes), for planting them out in tufts in March. We seldom sow autumn Peas, preferring those planted out both for crop and quality. Broad Beans may be treated the same as Peas. Mazagan or Early Longpod are generally used for early use. Cape Brocoli will now require to be looked over frequently, taking them up with all the roots and earth they can carry, and placing under protection as soon as the heads are fit for use, as they might be destroyed at any time by frost. They will keep fresh a long time at this season. Look over lately-stored roots and tubers occasionally, taking out any that are decaying. "Heating" should be carefully guarded against. All vegetables growing under protection must now have careful attention as to airing in mild weather, using the lights only to keep off heavy rain and frost. Keep the surfaces well stirred, and allow no decaying leaves to remain. If slugs are troublesome, a dusting of lime, soot, or coal-ashes sifted, will keep them in check. Globe Artichokes may have dry litter placed round their collars, and earth laid against it and made smooth: it is as necessary to keep off damp as frost. Heavy coverings to keep off frost often do more harm than good, by holding the wet and rotting the hearts of the plants out. The soil thrown up and patted with the spade and left sloping from the plants often answers well. Seakale may be started soon to give a supply at Christmas; bringing it on slowly will give much finer heads. If coverings of pots or boxes are used under fermenting material, daily attention must be given to keep the heat steady. A heavy fall of rain will often make the mass of material quite cold, or *vice versa* if it should be rank and dry. Leaves keep the heat very steady, but no material can equal a heated house where boxes with lids can be used to keep the Seakale close and dark. The same applies to Rhubarb, except darkness. Glass structures heated, and where air can be given, answer admirably; or under the stages of plant-houses, where the roots can be packed closely together. Moisture is necessary to keep growth active. We have seen many hundreds of roots (under stage of plant-houses) of Victoria Rhubarb grown for Covent Garden market, and the produce finer than we ever saw elsewhere, and no trouble taken with it, further than taking the roots out and in, the drip from the pots at watering-time being nearly all the moisture given. Asparagus placed in a frame on a gentle heat as thickly as they can be packed, and a few inches of light soil thrown over them, is all that is necessary when preparing for forcing. Copious waterings of tepid water should be given when the plants are in full growth, and plenty of air given to strengthen them. Blanched Asparagus,

such as is often seen in the market, we consider very inferior. Mushroom-beds, if out of doors, will require careful covering with soft hay or some such material ; light thatched frames placed over the covering will keep it dry and save much material. Mushrooms in houses or cellars will now require more care, keeping the temperature steady from 55° to 60° ; allow plenty of moisture to be thrown about the floors and over every surface except the beds, which require moistening sufficient to keep them neither wet nor dry. Where the crop is gathered, a watering with tepid water may start the beds into fresh bearing. Parsnips and Jerusalem Artichokes may have a quantity of litter thrown over them in the ground to keep out frost, so that they can be dug up when required ; a quantity kept in store covered with dry straw will answer well to keep up a supply. Collect all tree-leaves in and near the garden, to keep a tidy appearance as well as to make manure. All refuse from crops should be taken away, to be covered with earth for dressing the ground when necessary.

As much work as possible should be done at this season in gardens, as after the turn of the year there will be enough to do to keep operations forward : draining, repairing of walks and roads, reducing overgrown hedges, and all renovations and improvements, should be forwarded as early as possible. Fruit-trees to be planted should now be done at once, and those already planted should be covered with litter to keep out frost. Standard trees and bushes (if necessary) should be firmly staked against wind. Pruning of all trees and bushes should be done as soon as the leaves are off them ; however, where birds are very troublesome it may be the least of two evils to let the bushes remain till spring, when the depredations of birds will be seen and in a measure remedied. Trained trees on walls, except Peaches, should be pruned forthwith. It is desirable to un-nail Peaches when their leaves are off, so that the wood next the wall can be fully exposed : pruning can be more easily performed, and the fruit-buds will be kept later, and more likely to escape spring frost. Gooseberries and Currants may be done first, which would allow the ground to be manured and forked over to frost. Care is necessary not to disturb the roots ; the surface soil can be drawn off them, and a sprinkling of clean earth thrown over in process of digging. Gooseberries, when pruned, should have a portion of young wood left in every season, and several of the old leaders cut out, thus keeping the trees always fresh and healthy, and the fruit is always much finer on the vigorous wood. The present season's growth is generally shortened back to an eye or two, thus forming spurs. The top shoot for next year is generally a young one left at full length considerably below the top shoot of last year, keeping the branch as upright as possible,

and always about the same height. Bushes require to be kept open in the centre, all crossing branches cut out, and the whole appearance to be like an umbrella turned upside down. Overcrowded bushes produce puny fruit of inferior flavour, and the crops are less certain. Red and White Currants are spurred in to the upright-growing branches, and less young wood left than to Gooseberries. However, we prefer removing a portion of them yearly by cutting out old branches and allowing young ones to take their place. Black Currants require annually a thinning-out of the old or previous year's wood, allowing the young shoots mostly to remain at full length, cutting out all shoots that are crossing, and topping those which are outgrowing the size and symmetry of the bush. We find these bushes much improved by a leafy mixture among the manure, and a little breaking of the surface over the roots. The mulching keeps the roots upwards, but all bushes are the better of having a clean stem a foot or more above the ground ; by this the fruit is kept much cleaner, and suckers are easily destroyed, and less likely to come from bottom. It is necessary to lift bushes when the suckers cannot be got rid of ; annual cutting them back increases them fourfold. A number of the best prunings can be collected, keeping them true to name, and tied in straight bunches, and "heeled" into the ground, to be made into cuttings to keep a stock of young bushes on hand : the cuttings can be made when the weather is not suitable for outdoor work. It is now becoming common to have breaks of Apples, like Gooseberries, and treated in the same way, except, perhaps, more attention being given to summer pruning than with smaller fruit (and we are certain the latter would be much improved if more attention were given to pruning in summer). These Apple-bushes do well along borders by sides of walls, though we prefer pyramid-formed trees both for Apples and Pears by sides of walks : these expose the fruit to sun, and have a neat appearance : they are not easily shaken with wind. To form these we prefer what are called "feathered maidens," which are upright rods with the laterals on them : these laterals need not be shortened much, except to regulate their lengths, making them shorter upwards, and at the tops to be merely spurs. These can be tied to shape, and kept regulated in the growing season, stopping the stronger shoots and allowing the weaker ones to grow. We have seen these trees neatly trained downwards to wires fixed to stakes sloping all round from the top of a centre stake, similar to a conical-shaped tent. Espaliers, when well managed, have a neat appearance, and generally produce well, and they take up little room. The new name (Cordons) is inducing many to try this system of fruit-growing, but on a lower scale—viz., instead of four or six shoots from each side of the main stem, one

or two only are taken. As it is only the roots which take up ground, we think the trained branches might be multiplied and the trees carried higher. Wires stretched from upright standards of wood or iron have the neatest appearance, and are most durable. Pruning of Pear and Apple trees on walls is just simply shortening in the wood to one or two eyes, keeping the spurs thus formed on each side of the branches, so that they may be close to the wall to have the full benefit of it. Everything which has a tendency to grow straight out should be cut off. All spurs previously formed and in their right place require to be treated with care, as many of the fruitful buds might (by inexperienced hands) be cut off, and the crop thus destroyed. Plums are generally allowed to make side-shoots, and trained in where there is room without crowding, always cutting out some of the older wood. Some prefer spurring plums, but as they soon (if not very well managed) get away from the walls and lose the benefit of heat, we think the practice of laying in young well-ripened wood the best; but all natural spurs, if close to the wall, should be left, which are sure to be fruitful. However, in very warm localities, such as some of the southern English counties, there is sometimes an advantage in allowing the trees to grow a little farther from the walls; this is particularly applicable to Apricots and Figs. But our experience even in the south of England leads us to believe that the closer the bearing-wood is to the walls they are more likely to escape spring frosts. The coping, whether of wood or stone, keeps the flower-buds dry. Cherries are generally "spurred," and perhaps they form more natural spurs than any other tree. Morellos require to have plenty of young wood left when pruned, but a tree which is crowded is seldom a productive one, or the fruit of fine quality. Where figs are grown outside on walls they should be protected in winter with straw-bands, mats, or some other material, as they seldom stand a sharp winter when exposed; besides, the crop for the coming season is easily destroyed by frost. Figs are best pruned when the covers are taken off in May, when any damage can be seen; and pruning can be done accordingly, and enough of young wood trained in to fill up the wall. Under glass, Figs generally do best when allowed to grow out from the wall, forming spurs like Pears, only thinning the young wood out, allowing the tree to form main branches, which remain securely fastened to the walls. We have seen Figs, where they have been allowed to grow at random, bear abundantly, and produce by far the finest Figs; many such examples are to be seen in the Isle of Wight; we have seen some in the neighbourhood of Ryde forming immense thickets. After trees are pruned, it is necessary (in mild weather) to proceed with nailing, or otherwise fastening them. The general system of training most

trees is "fan" training, or as the spokes of a wheel. We hope to say more on this head next month.

Shrubs of all kinds may still be lifted and planted: it is often necessary to regulate shrubberies by relieving specimens which would soon become one-sided, or die round the bottoms: one healthy well-grown specimen is of more value and credit to the cultivator than a dozen badly grown. Ground is often allowed to be covered with a thicket of common shrubs; it is then necessary to keep them well regulated with knife and saw, to allow a continued succession of young growth, otherwise dead or leafless wood is the result. When transplanting shrubs, good balls of earth should be kept on them, and very large holes made, and the balls mulched after planting.

All beds and borders which have been occupied by flowering-plants should now be thoroughly turned up to the action of the weather. Any dressing of manure or fresh soil should be given before digging; a quantity of fresh loam may be useful in renovating beds. Frequent dressings of rich manure are sometimes injurious, especially in heavy soils. Leaves are, from this cause, often more abundant than flowers. Leaves and everything unsightly should be swept from lawns, and every part of the grounds kept as orderly and clean as possible, which will in a measure make up for the loss of flowers and foliage.

All florists' flowers, such as Pansies, Pinks, Cloves, Carnations, Auriculas, under protection, should be frequently examined, to see that there is no drip or damp among the plants. The surfaces of the pots should be frequently stirred, and only enough water given to moisten the whole ball of soil, and fresh air freely given when weather is favourable. Plant bulbs of all kinds which are not already in the ground. Protect with coal-ashes or other material to keep out severe frost; but if the spaces are very small, thatched or boarded covers will answer well. Chrysanthemums may be propagated as soon as cuttings can be had; these are necessary only for fine specimens. The specimens now in bloom and opening their flowers will be benefited with good soakings of manure-water, especially if the pots are full of roots. Gladioluses may be lifted and their roots laid in sand, and the tops allowed to die down gradually. They may be kept in any dry place free from frost. Rose-stocks for planting may be secured, and all decaying roots trimmed off, cutting down the stems to the required height, and cut all suckers and unnecessary growths clean off; plant them in rows where they are to be budded. Plants in pots of hardy shrubs, such as Azaleas, Lilacs, Rhododendrons, Deutzias, should be under cover, so that they can be introduced to heat gradually. Much of the success with flowering-shrubs, when forcing them, is a slow beginning, and no sudden changes allowed. Lily of the Valley will be in

fine condition for lifting this year ; good tufts potted and brought on gradually in a mild temperature will be certain to flower. Those which have been kept in pots will require to have their drainage looked to, and a good surfacing of rich soil given. Violets in pots will require plenty of water, air, and light. Bulbs potted early must be examined, and not allowed to grow too much in the covering, as they would be weakly and deformed. Snowdrops and Crocuses will not stand hard forcing ; indeed, protection is all they require. All plants for next season's decoration out of doors should now be in safe quarters. A good quantity of hardy plants, such as *Cerastium*, variegated *Arabis*, *Ajuga*, and *Violas* of sorts, should be put in a spare border rather thickly for dividing in spring. All window plants must now be kept free from dust, and carefully watered, and not allowed to remain where frost can reach them. Hyacinths in glasses must be brought gradually to light as they advance in growth ; and when the blooms begin to push, they should have all the sun and fresh air possible. Roses in pots do well with plenty of air and a genial bottom-heat ; much heat causes weakness. When flowers are opening, a dry greenhouse temperature is necessary. Sponging of foliage and cleaning of insects should be followed up when necessary, and no cobwebs or other filth should be allowed to appear. M. T.



A CHAPTER ON VINES.

Two years ago last March ('66), a house for Vines was planted here. The house and border were new, the border principally composed of the surface-soil from a hollow in the woods adjacent, on which the principal plants were the common Bracken and the common Heather, having some very strong coarse grass growing on it. If one were fool-hardy enough to pull a handful of this grass through their half-closed hand, in all probability such an operation would lacerate it. The young Vines were obtained from Mr Cutbush, Highgate, and were planted outside, one to each rafter, in the usual way, the border being about the course of two bricks below the front wall-plate ; front lights about 18 inches deep. When planted and cut back, they were about 9 to 12 inches up each rafter. In the beginning of May they began to break, but up to the beginning of June, when the sun had power to warm the border a little, they did not show much appearance of growth. None of the plants were very strong, and up to this time of their few leaves none were over 6 inches broad. I had no great

hopes of seeing any of them reach the top of the rafters during that season. However, before ten days of June had passed over us they all seemed to be invigorated with a new life, the first symptom (and a good one) being their throwing out very strong tendrils, and then every bud upon the 1 foot 9 inches or 2 feet burst into growth (only about two buds towards the points had burst before), all the shoots swelling in their growth much thicker than their old wood.

Entertaining the idea that, where plenty of branches and healthy leaves are allowed to develop themselves, we, as a general rule, may expect a corresponding extension of the roots, both in health and vigour, we allowed each Vine to send up two, and about one half of them three rods each, and this they did; and the leading one, before the beginning of August, reached to the top of the rafters, 17 feet. Some of them were permitted to lie along upon the shelf, near to the top of the back wall, 4 to 6 feet long, each pushing out several laterals. Others were stopped after reaching the top; these, likewise, kept on throwing out laterals. Such broad and healthy foliage as they all produced has been seldom excelled. We gave them fire-heat to assist in the maturing and ripening of the wood. Having Pines growing under them, we were obliged to take them out during winter. However, they all made very strong wood, and the most of it well ripened. We allowed them to remain out as late as we could without doing injury to their buds, during the operation of taking them in. With the exception of one or two, we allow the rod under the rafter to remain about 12 feet long, and likewise one of the side rods to run up under the middle of the sashes, the sashes being wider apart than usual. These were cut back to about 6 feet long, as is sometimes the case with young Vines, especially when of strong growth. One or two of them did not break away so regularly as was desirable. However, during the season '67 they were quite a picture worth seeing, from the splendid crop of Grapes which they produced. During '66 each Vine was allowed to grow one or two bunches of half a pound each, to show their colours. We have of late heard a good deal about a *perpetual-fruited Vine*. It may be questioned if this will prove of any general benefit, as no doubt such will prove ultimately very exhaustive to any Vine. However, be this as it may, all these young Vines (besides bearing a good crop of fruit) kept on all through the season '67, up to the end of September, to throw out fresh laterals from every stoppage, and show for fruit. We kept on taking them off soon after they made their appearance, excepting at the top, upon three or four Vines, where we allowed them to remain as ocular evidences of an unusual degree of early and rapid maturity, combined with power of production, during summer '67. Each Vine, besides the crop which ripened,

showed some three and four different times for fruit, the clusters appearing to come smaller and smaller each time as the season passed on. The first crop were nearly 2 lb. each bunch, and those of the second crop were hardly 1 lb. each; and, as already stated, each succeeding show of fruit the clusters were smaller and smaller.

From Vines so young having produced such a large crop during '67, we did not look for even an average crop during '68. However, in this we have been agreeably surprised to find, from the crop which they have yielded this season, that the large crop which they yielded last year had not injuriously affected them, as the crop, the young wood, and the foliage have all been very fair. We find the stems of these Vines, where they enter the house, average in circumference from 4 inches to rather more than 5 inches. There are seven Vines in all—one is Lady Downes, having on it now twenty-five good bunches, none less than 1 lb. and some over 2 lb., every bunch exhibiting as *rich a bloom* on every berry as any Grape-grower could possibly wish to see. Besides this, it has the would-be perpetual tendency manifested on it, having produced fruit after the first, second, and third stoppings, and some of these we have allowed to remain on the Vine. Some are now colouring (8th September) the next half size, while others are not much larger than large Marrow Peas (one or two of the other Vines are the same), being left on as evidence of their health and vigour. Last year this Vine ripened eighteen bunches of fruit, each averaging about 1½ lb. of first-rate quality, besides having fourteen cut off. These were about as large in size as those that were allowed to remain on the Vine. We did not cut off so many extra bunches this year.

There are two Vines of Black Prince; the bunches of these have not been so large as those of Lady Downes, but of good quality. Last year fourteen bunches were taken off each of these, and there were left on a large crop that ripened off well.

One Buckland's Sweetwater, excellent both seasons. This Vine ought not to be in the same house with late Vines.

One Vine, we believe, is the Black Alicante. Last year the bunches on this Vine were larger than the Black Alicante generally yields. This season they are only about half the size of what they were last year.

From these seven young Vines we cut off, as being too many, eighty-four bunches last year—very nearly as many as we left on them. This year we did not take any note of the bunches that were cut off: however, I believe they were not so many. We consider it by no means a good plan to depend upon growing Pines well in a house where one has to grow Grapes, especially when the Grapes are wished

to be had for late use (autumn and the early part of winter), as one cannot prevent the Grapes sometimes becoming damp. Moreover, Grapes ought to have a period of *complete rest*. To take Vines out, by opening or removing the front lights, often causes the stem of the Vine to be bent in so short a position as to be in danger of twisting, if not of breaking, the stem of the Vine.

G. DAWSON.

[There is nothing uncommon in Vines yielding two and three crops of fruit in a year, but it is a bad practice to allow them to do so.]-ED.



IRESENE HERBSTII, POLEMONIUM CERULEUM VARIEGATUM, AND VIOLAS.

WHEN in their best dress these are the most beautiful plants which can be grown for border decoration; but when not well cultivated, they are amongst the most forlorn-looking subjects possible. In their finest leafage they are most beautiful and effective; when stunted and starved, they are, one might almost say, most offensive. A good deal of experience leads me to say that in wet seasons and dry they can be had in all their beauty, and that the secret of the matter lies in high cultivation. Look at them on a dry and hungry soil, stunted and wiry, and you will say they are not worth growing; but see them well supplied with rich and well-decomposed manure, and they are allowed to be indispensable—the one for the brilliant crimson tinge, especially when looked at against the sun; the other for its singularly chaste and pleasing Fern-like foliage. This season, through scorching heat and pouring rains, both have been most effective. Before planting them the ground was covered with a very heavy dressing of old Mushroom-bed dung, and then the soil and dressing were thoroughly incorporated to the depth of 18 inches with one of Parke's steel forks. In a ribbon-border the Polemonium has this season formed the front line, planted alternately with *Viola cornuta*, and *Iresine* the second line; and no two lines could be more effective. They are unbroken lines of crimson and variegated foliage—each plant of the Polemonium being surrounded with a low fringe of the soft colour of the *Viola*, which, while I write, is one mass of bloom. A little while at midsummer it gave way a little, when it was cropped in a little and watered, which caused fresh growth and unusual abundance of flowers. Both plants were equally fine during the cold and wet season of 1867; and I am certain that, cultivated thus, both plants will always prove charming parterre plants. The same remarks hold good of the *Viola*; for, unless liberally cultivated, it

will not prove a continuous bloomer in dry seasons. It succeeds well in partial shade.

Messrs Dickson & Co. sent me for trial a few plants of a native *Viola*, which their Mr Tait collected growing wild near Moffat, at the Deil's Beef-Tub, which, I think, will prove a valuable acquisition for low front lines. Its colour is a deep violet or rather plum, and its habit is compact and neat.

While referring to Violets, I would strongly recommend, as a yellow bedding-plant, seedlings of the Yellow Prince Pansy, now so much grown for spring decoration. Seed of this variety, saved apart from other colours, produce eighty per cent of yellow flowers like the parent. Sown in February, and planted out when fit to handle—say early in May—they have bloomed here in a very hot place the whole summer, and are now, October 7, finer than ever, being a perfect sheet of yellow. For wet climates they would be most useful, as they stand rain with impunity; and seedlings being more vigorous in growth than cuttings, their blooming powers, both as regards duration and profusion, are wonderful.

Imperial Blue Pansy, recently raised and sent out by Messrs Downie, Laird, & Laing, is a most effective bedding variety, both for spring, summer, and autumn—none of the older bedding Blues can approach it; and I have no doubt seed of it, carefully saved at a distance from other colours, will reproduce a dark-blue progeny, the same as does the yellow. In damp localities it would drive *Lobelia speciosa* out of the field, as the Pansy loves moisture, while the *Lobelia* grows too much to grass.

DAVID THOMSON.



CELVISA AUREA PYRAMIDALIS.

THOSE who know the "golden glories" of this stove Annual will agree that no one who has much late autumn and winter demand for sitting-room and dinner-table decoration, as well as cut flowers, should be without it. There are many spurious and unsightly varieties of this vended and cultivated, and the true variety is comparatively scarce. On this account it would be well, when the true variety turns up, in a collector to destroy, as soon as they manifest themselves, all spurious sorts, and carefully save seed from the good and true; and when this practice is followed, the right variety can be constantly reproduced. I have grown golden pyramids of this 3 feet high in 10 and 11 inch pots, which resembled, in all but colour, a tower of ostrich-feathers.

Its cultivation is very simple: sown in March in stove-heat, and

potted singly when 2 inches high, and shifted as required into pots varying from 8 to 12 inches according to the sized plant desired, using a compost of equal parts loam and leaf-mould, with a little sand added. This, and a stove temperature in a light place, with frequent syringings on fine afternoons till it begins to bloom, is all that is of importance in its culture; and when in bloom it stands conservatory temperature, and lasts in bloom a long time. When the seed ripens it should be carefully looked after, or it drops out of the husk and is lost. This and its crimson varieties are of great service for autumn and winter display; and they bloom just at a time after most autumn things are over, and before late winter things come in.

DECORATOR.



CHARLOTTE ROTHSCHILD PINE-APPLE.

THIS variety of Pine-Apple is creeping fast into favour; and deservedly so, if for no other reason than its handsome compact habit of growth, its splendid fruit, and long-keeping qualities after being perfectly ripe. It can be grown in a space not much more than is required for a Queen, and throws 8 and 9 lb. fruit when well grown in an 11-inch pot. It colours very highly, and altogether it makes a noble-looking fruit. In this respect it is not surpassed, while in flavour it ranks nothing lower than second-rate as compared to the Jamaica or Smooth Cayenne, the two best Winter Pines grown. Charlotte Rothschild is firmer in flesh and a shade more acid than the Cayenne; and on account of the latter quality some profess to prefer it—at all events, all who are required to keep up a creditable supply of Winter Pines should not be without it; and it is a certain fruiter, as indeed are all Pines in the hands of good cultivators.

D. THOMSON.



NOTES ON GREENHOUSE PLANTS.

(Continued from p. 447.)

MIMULUS (MONKEY FLOWER).

THIS gay genus, once highly and deservedly esteemed, has now rather fallen in public estimation. Why this should be, is hard to resolve. The Mimulus, when made the recipient of just ordinary attention, never fails to return high percentage, while for spring and early summer adornment it is highly acceptable. Its profusion of brilliant flowers, eminently distinct in their formation, their strikingly-bold markings, exhibited on some in dense blotches and mottlings, and in others in

beautiful reticulate twinings over ground-colours, render it one of the most effective genera we possess.

To experience the benefit arising from the possession of a batch of good healthy seedlings, *Mimulus* is worthy a little labour just now. First, then, let a packet of the varieties known as "greenhouse sorts" be secured from a seedsman known for keeping the first quality, and let them be sown without delay. Meantime offsets from the roots and cuttings should be put into the nursery-bed, and the rooting process accelerated in a warm bed; these will produce their complement of flowers a stage earlier than seedlings, thus prolonging the period of bloom. The following short list are all most commendable:—Beauty, C. W. Cowan, Dr Greville, Clara, Etna, Grand Sultan, Hugh Odair, Gaiety, Madame Mielley, the Bride, Nymph, Etna.

Propagation by Seed.—Half fill a shallow pan with broken pots, and the remaining half with a compost made up of equal proportions loam, sand, and leaf-mould, sifted finely. Smooth and moisten the surface of the soil, and allow the water to subside; then scatter over the seeds thinly, and again gently press the bed with a smooth board, completing this part of the business by covering the pan with a piece of glass, which is all the covering the seeds require. Now convey the pan to a house where a constant temperature of 60° is maintained. Keep the bed rather moist and shaded, particularly from strong sunlight, until the seedlings have acquired strength to resist its effects; and as soon as this can be depended upon, air may be admitted more copiously, and shading dispensed with, as well as a situation assigned them within a foot of the glass, being careful throughout that the soil does not get crusted or dry, watering on every occasion with a fine perforated rose.

Supposing all these preliminary processes are accomplished, the plants are now ready for transplantation. Plant them in lines 1½-inch apart each way into other pans. This done, water as before, affording slight shade for a few days, until it is ascertained that root-action has again commenced, when they may be allowed to enjoy all the air and sunshine at command in fine mild weather, their location all the while being within a foot of the glass, as before stated.

Thus treated, their progress will be rapid; very soon their broad leaves will cover their allotted space, and each plant demand a separate pot for itself. These pots should be 3 inches in diameter, preferring a compost now rather rich in organic matter—namely, one-third loam, one-third well-reduced cow-manure, one-sixth river-sand, and the same of leaf-mould. Little more need be said of their subsequent management, further than pursuing the routine of what has already been described;—attention to watering and airing, larger shifts of pots, turning the plants occasionally, and when the leading shoots have

attained to a few inches growth, pinching them back to encourage the production of vigorous side-growths, staking and tying out the stems as soon as it can be conveniently done, bearing in remembrance that the plants receive no check to their growth, the consequence of which would ultimately be stunted plants that would flower prematurely and insignificantly. The main object is strong short stems, accompanied with large rich foliage; this being attained, no fear need be entertained about the flowers, either for quantity or quality. Finally, to enhance the bloom, weak guano-water may be supplied once a-week from the time the first flowers open until they are at the height of their flowering.

CONVALLARIA MAJALIS (LILY OF THE VALLEY).

This lovely little native plant requires no description, nor words of ours to recommend it; every one who has seen it admires it. The bright summer transparent leaves are enough to recommend it to a place in the conservatory in winter, without taking into account its spikes of pretty white flowers. The only drawback to this plant when forced is, that the first year it furnishes but an indifferent supply of flowers; but the following winter, if cultivated in pots through the summer, it will more than make up for that deficiency.

Culture in Pots.—Lift circular patches (according to size of pot intended to fill) out of the bed before the frost cuts down the foliage, being careful to preserve the roots as much as possible. Drain the pots they are to occupy, and afford their roots a rich mixture. After potting, plunge the pots inside a cold frame, and keep them comparatively dry until it is desirable to start them into activity. Forcing should be conducted slowly at first, allowing a temperature of 50°, with a rise of a few more degrees when the leaves appear above ground, when they may be taken and placed again in a lower temperature until their foliage is nearly developed, and finally staged. As soon as the flowers decay and the foliage gets indifferent, plunge them out of doors, and attend them through the summer with water, and keep them free from weeds, and they will in all probability furnish a few fresh leaves. Endeavour to mature the crowns by lending every assistance, and supplying a fresh source of food in the shape of manure-water in a reduced state. Clear away the dead leaves with the assistance of a knife, that the crowns may not be damaged in the operation.

VIOLETS.

“Sweet Violets,” modest and endearing! The vigorous, the feeble, young and old, all are delighted with, and welcome, the Violet.

As a subject for pot-culture, this genus is most important. Nobody

ever tires of them ; yet the Violet is rather a haughty little lady, that will not always adapt herself to our likings, soil, and situation. She is most scrupulous about protesting stoutly against dry, arid localities, where the soil is light (this is especially the case with the Neapolitan species) ; but where a warm, partially-shaded spot, with slightly moist but not over-unctuous loam, can be afforded, we may depend upon her sweetest smiles.

Spring-time is the season to commence operations to secure well-finished plants, and my apology for speaking on the matter at this unusual season is, that I have the impression that Violets in general will have attained to more than ordinary maturity this year (where red-spider has not sacrificed their foliage). To support this I see those with us promise much better than in other years, exhibiting well-ripened crowns thickly bristled with flowers unopened. These can be lifted with safety and placed in cold frames, and they will, with a little attention, come of good service for greenhouse use in the winter, though unqualified to vie with those grown in pots over summer for that purpose.

Culture in Pots.—From the beginning to the end of April is the most suitable season of propagation. The offsets, with as many rootlets adhering as can be obtained, answer best dressed in the usual form and inserted into thumb-pots amongst a mixture of sandy loam and leaf-mould. The pots should then be plunged to their rims inside a cold frame amongst leaf-mould, preparing a sheltered situation for the frame with a southern aspect. Attention must then be given to shading while the sun acts powerfully on the glass, but by all means let them have the benefit of the morning and evening sun, which will stimulate root-action, at the same time keeping the plants rather moist and the frame pretty close until the roots have taken the soil. As soon as the pots are filled with roots a larger shift becomes essential. The size most appropriate to meet their individual wants must be decided upon from the appearance of the plants themselves. Pots 6 inches diameter will do to flower the most vigorous, while 4-inch pots ought to suit the smallest. Rich, middlingly heavy loam, with a fourth equal parts river-sand and very much reduced manure from the stable-yard mixed well together in its rough form, will answer for this their final potting. Turn out the balls without breaking and remove the crust, inserting them carefully in their new pots ; press the soil rather firmly without compressing the roots, and after well watering return them to their quarters in the frame for eight or ten days, after which time they may be plunged outside.

A proper situation for summer-growing comes to be the next essential consideration. Experience has made it apparent that the Violet

delights in the effects of sun-heat in the atmosphere, but shrinks from the sun's direct rays. Indeed, to assign the Violet a situation in which it will feel happy, the strong sunlight must in a manner be subdued. This is a simple matter when a light frame of wood covered with thin calico is not considered an eyesore ; this, placed before the plants in a slanting position sufficient to shield them when the sun is excessively hot, will effectually meet the desired end. With such an appliance at hand, the warmest and sunniest locality in the garden may be chosen.

Watering and After-attention.—The spot selected, plunge the pots in lines 1 foot apart, and give them daily attention so that they suffer not for the want of water, considering, while large rich green foliage is acceptable, it is undesirable that the foliage should overpower the flowers :—a circumstance too often the case, which invariably arises from over-feeding ; so it will be found preferable only to use pure rain-water for their support, never allowing them to get excessively dry, nor sodden with too much water. Constant attention to these requirements, and moderation, are the proper guides to success. Sprinkle overhead after strong sunshine, removing the shade at the same time (before the sun gets entirely out of the range of the plants), which will tend to keep the foliage hard, as well as forward the ripening of the crowns.

Such, in the main, are the requirements of the Violet to the middle of September, when accommodation should be provided them in a comfortably dry frame, where the same moderation as regards water should be pursued, airing on every occasion unless in hard frost. The stock on hand may be divided into three lots, and the first placed in gentle heat to assist early flowering ; and when the first flowers open, stage them in their flowering quarters in the conservatory, placing the second batch into heat at the time, and so on.

A. KERR.

(To be continued.)



PYRAMIDAL BELL-FLOWER.

THIS fine old plant has flowered so well *outdoors* this season with me, that I must beg a short space to recommend its merits as a decorative plant in the open ground, and as a valuable pot plant in the greenhouse or for the cottage verandah. The natural family Campanulaceæ is a genus of plants with numerous species, distinguished by bell-shaped flowers—hence the name derived from *campana*, a bell. The rampion—*C. rapunculus*—is used as food in Italy.

The *Campanula grandis*, which was introduced from Russia about 1842, and is after the habit of the Pyramidal Bell-flower, seems to

have disappeared from trade-lists ; nor have we seen it in any place for many years. The flowers of this variety were very large, nearly 3 inches in diameter. This is a plant well worth retaining in any collection. *Campanula pyramidalis* is a native of Savoy, and was cultivated in Britain by Gerarde. For a long time it was a fashionable plant, and adorned the halls of the nobility, and was frequently trained (as we have seen it in the north of Scotland) to cover the fireplace in summer. This *Campanula* is hardy, but its greatest beauty is developed in pot-culture under glass ; in greenhouse culture the flowers expand in such a marked degree compared with plants grown in the open border, that many assert that what is grown here in pots is a distinct variety from that grown in the open border ; yet the plants are taken from the same stools, and the difference of flower is simply brought out by culture under glass. The outside plants have been in full flower for at least three months, and are now (Oct. 13) fairly covered with fresh flowers from the ground to a height of 7 feet. The plants are sheltered by *Rhododendrons*, and growing in rich light earth.

The white variety of this *Campanula* we find rather more tender than the blue, but it is equally ornamental, perhaps more so, in pots. At Rothie, in Aberdeenshire, we remember having seen a border planted with the blue and white *Campanula*, and the effect was grand. This fine old plant is easily propagated by seed, or by division of the root ; for common practice, division of the old stools will be found the most convenient. Stronger-flowering plants will be got from seedlings, but then it takes much longer time to get the plants into flower ; it is generally the third year before good flower-stalks appear from seedlings. Suckers taken early in autumn, or good crowns, with ordinary care, will flower the following summer ; every inch of the fleshy roots will grow into plants if put into a pot in light sandy soil ; but seedlings are to be preferred to dormant eyes for good plants. To raise seedlings of this *Campanula* the seed should be sown under the same treatment that is given to half-hardy Annuals, taking care that the seed is sown on the surface of the soil : the seed will grow in a cold frame, but not so sure. No finer old plant can be found for *frame gardening* ; the young plants always do best in frames, and a frame is the best winter-quarters for plants to flower the coming season : it is the previous season's growing that makes the fine pyramid of flowers. For pot-culture small shifts are the best in the summer, previous to flowering ; flowering plants we shift early in spring into the pots in which they will flower, and water freely with liquid manure. A 12-inch pot will be sufficient for the largest-sized plant it can be wished to grow for greenhouse or conservatory. A free light rich soil should always be used in potting ; in stiff soil the plants are apt to rot in pot-culture.

CHAS. M'DONALD.

NOTES ON HARDY HERBACEOUS PLANTS.

ACHILLEA.

THIS is an extensive genus of composite plants. Most of the species are European, two are natives of Britain in common with other countries of Europe, and several are from N. America. All are hardy with the exception of *A. Ægyptiaca*, a pale yellow dwarf sub-shrubby sort from the Levant, which requires protection in our winters, and is therefore disqualified for more favourable remark in these Notes. Not a few of the species are weedy and uninteresting; quite unfit for cultivation for ornament. The following is a selection of a few of the best, but it should be borne in mind that only one or two may be considered first-class herbaceous plants. They are simply showy without much refinement, and their chief recommendation is the prolonged flowering-period of them all. They are all plants of the easiest cultivation, adapting themselves readily to almost any kind of soil and situation.

A. Ptarmica flore-pleno.—This is one of the best, and is a permanent double form of our native *Sneezewort*. It grows to the height of $1\frac{1}{2}$ or 2 feet. The flowers are produced in compact terminal corymbs, are white, and continue for nearly four months in the year—from July to November. It is a distinct and attractive plant, and is well adapted for planting in masses on moist banks in open woods, and for ornamenting rockwork or the mixed herbaceous border. Isolated beds of it alone, or in mixture with other hardy plants in extensive places, would produce a good effect at small cost of care or labour.

A. Eupatorium is the boldest, and perhaps the best, of the family. It rears its dense large terminal corymbs of bright yellow flowers to the height of about 4 feet. In a mass it forms a striking feature when viewed from some distance. It is useful for mixing among low-growing shrubs for the purpose of giving colour to masses of green, and for planting in masses in semi-wild places, but is too tall for introducing with fitness into small gardens or narrow mixed borders, although it has an excellent effect in back lines of wider borders. It flowers throughout July, August, and September, and is a native of Siberia.

A. aurea.—This is quite a contrast in stature to the last-named sort, being a low-growing plant rarely exceeding 1 foot or $1\frac{1}{2}$ foot in height, but it is the prettiest of all the ornamental *Millfoils*. It has the habit and general appearance of our common British *A. Millefolium*, but the flowers are yellow and larger, and are produced in compact terminal corymbs. The colour of the flowers is superior to that of any other *Achillea*, being golden yellow, and they last in greater or less profusion from June to September. It is invaluable for covering rockwork, and

for massing in front lines of mixed herbaceous borders. It is a native of the Levant.

A. tomentosa is nearly related to the last species, but is taller. It is erroneously put in most of our catalogues as a native of Britain, whereas it is from the south of Europe. The flowers are yellow, and are to be had from May to October.

A. asplenifolia is a pink-flowered species from N. America, scarcely superior to the pink form of our British Milfoil, and is noticed here only on account of the variety of colour it gives, which in some cases might be desirable.

A. Millefolium fol. var. is a pretty and desirable form of this common plant, with its delicately bipinnate leaves variegated. It may never be very useful in the flower-garden as a bedding-plant, though it is fairly worth a trial for that purpose; and should it fail, it will always give satisfaction on the rockwork or in the mixed border.

Lythrum Salicaria and its varieties, *roseum* and *roseum superbum*, are among the most striking and handsome of summer and autumn flowering herbaceous plants. *Roseum superbum* is the finest. In ordinary soils it reaches the height of 3 or 4 feet, with many upright square stems, so woody and firm in texture as to be independent of support in most situations. The flowers are purple with a dash of rose, in long terminal and axillary spikes, which are very effective at a distance or near at hand, and appear in July, August, and September. For ornamenting the banks of lakes and streams and marshy places, whose vegetation is often enough extremely uninteresting, this splendid plant is invaluable, and in such situations it reaches its greatest luxuriance and beauty. It succeeds well also in the herbaceous border; in almost any common soil, if not extremely dry; but in light soils it should not be often shifted; rather invigorate with surface applications when necessary, and leave the deeper roots undisturbed—they are its only safeguard against its worst enemy, drought. There are several other species of *Lythrum*, but not any equal to the finest variety of our own British *Loosestrife*. All are purple-flowered with one exception, *L. lineare* from N. America, which is white, and may be useful in contrast with the fine rosy purple sort above noticed.

W. S.



**OXALIS CORNICULATA RUBRA AND IRESINE
HERBSTII**

ALTHOUGH the first of the above-named plants has been out for several years, and at different times been recommended as a bedder by some of our well-known flower-gardeners, it is very rarely seen bedded out. Yet I doubt if it can be matched for perfect neatness and chaste beauty when used as an edging, and in combination with certain colours.

We have used it here for the last two years, and one bed (which has been repeated this season by special request) where the *Oxalis* is used as an edging has been the most admired on the place; and many gardeners who have seen it, and who before thought nothing of it, have gone away with a pinch of seed and a new determination to use it more extensively. We have used it in various combinations, but the most effective example of its adaptability as an edging is a scroll-bed upon grass, the centre of which is filled with *Christine Geranium*, belted with *Alyssum* and edged with the *Oxalis*. The bed forms a perfect cushion, and the pink, white, and bronze rings being kept perfectly distinct, the effect is most striking and beautiful, but should be seen to be appreciated. I will, therefore, just advise your readers to try the above pattern once, and I shall be surprised if the *Oxalis* does not become a permanent favourite. It will grow in any ordinary soil, and thrive in any season. It is propagated, like the *Lobelia*, by seed, but is much hardier, and a quicker grower, and may be pricked out in a cold frame in March or April. Indeed, it will stand the winter outdoors, but when propagated in the above manner it fills up better, and does not go to seed so soon.

With regard to the *Iresine*, I just wish to observe, for the encouragement of those who have failed with it, that here, in South Yorkshire, 700 feet above the level of the sea, in a cold and easterly situation, the *Iresine* has been a success. We failed at first, but, determined to keep such a decided acquisition if we could, we had the bed where it was intended to be planted half emptied of the natural soil and filled up with decayed hot-bed manure. The *Iresine* is planted out thickly about the middle of June, and for the last two years it has grown well, and kept its colour until destroyed by frost in autumn.

JOHN SIMPSON.

THE GARDENS, WORTLY HALL.



NEW PLANTS OF THE PAST MONTH.

IN my last paper I alluded to the "Allamanda discussion," which centres round this inquiry, "Is the so-called Allamanda Wardleiana a distinct species of this magnificent genus?" The 'Gardeners' Chronicle' has recently published an interesting account of an examination of some plants of *A. Hendersonii* and *A. Schottii*, in a growing state, and the conclusion reached is briefly summed up thus: "We may state that *Allamanda Hendersonii* and *Allamanda 'Schottii of Henderson'* are distinct plants; that *A. Hendersonii* differs in its shorter, more quickly floriferous growth, and consequently more compact habit, and in its smoother and more regular, and rounder, broader-lobed flowers; and that *A. Schottii of Henderson* differs in its more rambling and elongated growth, and its somewhat larger but looser, because longer and narrower, lobed flowers." This difference has been disputed by good plant judges, especially by such an authority as Mr R. Parker, of the Exotic Nurseries, Tooting; but the statement made by the 'Gardeners' Chronicle' certainly appears to furnish conclusive testimony in favour of the actual difference existing. Further, the report goes on to state that "the other point on which the evidence we have been able to collect is equally clear is, that '*A. Wardleiana*, so called, and *A. Hendersonii*,' are identical, the dwarf bushy habit being merely the result of special treatment." This is corroborative of the conclusion similarly reached by the Floral Committee, and it is to be hoped that at least it will tend to soften down the tone of the harsh language Mr Tanton has indulged in, in regard to that body.

September has not been so prolific of new plants as the preceding month, August. Messrs Veitch & Sons have received first-class certificates for *Yucca albo-spica*, having elongated lanceolate leaves, hung on either side, with white filaments; for *Begonia Clarkei*, a handsome new variety, bearing considerable resemblance to *B. Veitchii*, which is said to be hardy; and it was stated that, if *B. Clarkei* should also prove to be hardy, it would be a valuable acquisition: for *Abutilon Thompsoni*, a variegated form of this fine old conservatory plant, having bright green leaves embroidered with gold, and said to be quite hardy, and capable of being used for bedding purposes: for *Masdevallia Veitchiana*, a singular-looking plant, having orange-coloured three-lobed blossoms tinged with violet, the lowermost lobes uniting at the edges to a certain extent, and giving the flower the appearance of having a cleft lip: for *Caladium Auguste Rivière*, a variety with leaves of a greyish tint in the neighbourhood of the midrib, and also prettily ornamented with bright crimson spots, novel and fine: and for the following Orchids—viz.: *Dendrobium*

bigibbum, a charming kind, having beautiful lilac blossoms, delicately suffused and pencilled with rose : and for a very handsome variety of *Cattleya*, called *speciosissima*, with large lilac sepals and petals, and a fine bold lip, charmingly suffused and streaked with yellow and crimson.

Mr W. Bull also received first-class certificates for *Strelitzia Nicolai* and for *Ravenala elegans*, two stately fine-leaved plants ; for *Geonoma imperialis* and *Bactris maraga*, two very promising new Palms ; for *Dieffenbachia eburnea*, with prettily-spotted foliage ; and for *Adiantum Semanni*, a bold pinnate-leaved Fern.

A second-class certificate was awarded to Mr Wood, nurseryman, Dunstable, for a pale yellow variegated-leaved variety of *Solanum Dulcamara*, with a good robust habit.

Other good new plants were *Ficus dealbata*, a very promising kind, the under part of the leaves veiled white ; and *Alternanthera amabilis*, a vigorous-growing form of *A. Spathulata*, but not shown in good condition. From a country gardener came capital examples of *Vallota purpurea major*, a larger flowering variety ; and *V. eximia*, the flowers of the latter being rounder and the truss larger than in the case of *A. purpurea major*.

The clever propagator of the Royal Horticultural Society at Chiswick (M. Bausei) has been very successful in raising a very fine lot of golden-leaved *Caladiums*, some of which will no doubt come before the Floral Committee, being very distinct and beautiful ; and another batch of seedling *Coleus*, a large quantity of which have foliage brilliantly marked with golden hues. These too will soon be represented before the Floral Committee. It is a wonderful break-away from the old type ; and the leaves of *Coleus Telfordii aureus* look quite dingy and washed-out by the side of these grand new kinds.

All the honours gained by florists' flowers have gone to Dahlias and Verbenas. Of the former the following have received first-class certificates : Indian Chief (Rawlings), claret crimson, shaded with violet, a fine and finished flower, and a good addition to the dark varieties, shown by Mr George Rawlings of Romford, and Mr Keynes of Salisbury : Memorial (Eckford), a finely-shaped pale-rose flower of great promise, and Mr Brunton (Eckford), pure white ground, with heavy lacing of deep purple, a fine and striking flower ; both from Mr Eckford, The Gardens, Coleshill, Berks : to Unique (Turner), a very pretty but somewhat small flower, tipped with rosy purple on a white ground, very fine shape, from Mr C. Turner, Slough : to James Hunter (Keynes), golden ground, slightly laced with orange-lake, a fine-looking flower, from Mr J. Keynes, Salisbury : and to King of Primroses (Rawlings), the colour soft primrose, a new and pleasing

shade of colour, flower large and finely formed, from Mr George Rawlings, Romford.

Second-class certificates were awarded to Mr C. Turner, for Polly Perkins, buff, faintly tipped with pale violet, and lit up in the centre with bright violet, a fancy flower of considerable merit; for Lady Dunmore, also a fancy flower, something in the way of Fanny Sturt; for Queen of Beauty, a bright-looking flower, the ground-colour blush, tipped with magenta; and for Louisa Burgess, another fancy flower, having a salmon-buff ground, striped and flaked with crimson, promising and good: to Mr J. Keynes, for Julia Wyatt, a creamy-white self, of good build and promising, and to Annie Neville, a fine white self, of fine shape and good centre.

Of new Verbenas—and they have been plentifully produced this season—first-class certificates were awarded to Mr C. J. Perry, Castle Bromwich, Birmingham, for Wonder, pale pink, with rosy-purple eye, pip large and fine; Perfection, silken pink, the pip large, circular, and very smooth; Model, salmon-pink, with large deep rose centre, fine shape; Emma Perry, white, with deep rose centre, the colour diffused over one-half of the flower, extra fine; Argus, deep pink, with straw eye, shaded with a ring of rosy crimson; and Florence Fyddian, lilac, with crimson centre, the pip of very fine form and smooth. The same award was made to Mr Eckford for Mrs Eckford, white, with pale rose centre, a very pleasing flower; Master Jacob, crimson maroon, with pure white eye, a fine and showy flower; Ace of Trumps, bright salmon rose, with crimson ring round a showy primrose eye; and Anna Keynes, dark mulberry purple self, very fine and smooth, and circular pip. Mr Eckford also received a second-class certificate for Lottie Eckford, brilliant plum colour, with small lemon eye, bright-looking and effective.

The foregoing may be said to mark a decided advance in the Verbena, fine as existing varieties already are. They are shown as exhibition kinds. They may prove good bedders, but that cannot be ascertained till they are sent out. Certain it is that of Mr Perry's new Verbenas of last year the following proved to be very fine bedders, even during the dry summer that is past:—James Birbeck, intense cerise scarlet; John Wilson, deep bright rosy red; and Shirley Hibberd, dark violet, with small white eye.

R. D.



GARDENERS, NATURAL AND SCIENTIFIC.

SIR,—While the subject of gardeners' education is occupying the attention of the gardening community, it may not be out of place to glance, in a kind of abstract way, at the object of so much interest himself, and to consider what are the peculiar characteristics and qualities which constitute the true type of the race, and how far these qualities are attainable by any artificial course of instruction ; or if indeed it is possible, even with the best appliances, to turn any ordinary sample of the raw material into the real article.

It would be unwise to ignore scientific ability, and useless attempting to prove that a sound theoretical education was not of the first importance in gardening as well as other things. Still, there are instances of men who have attained a high degree of success in their profession without almost any scientific ability whatever, as there are of others who, with a theoretical knowledge sufficient, it might be supposed, to enable them to anticipate every difficulty, and not lacking in application and energy, who have never risen above mediocrity, or even to that level. Such instances are common, and cannot be easily accounted for, unless on the hypothesis adopted by a certain author, who gets rid of a similar difficulty with regard to doctors, by supposing that, to fulfil his duties properly, a man must be born in that capacity ; and I think that the medical and horticultural professions have so many points of resemblance as to warrant the conclusion that, to be a true gardener, he must have an equally early beginning—a theory, I am afraid, which, if universally accepted and acted upon, would have the effect of placing some very awkward obstacles in the way of a gardener's education, and from which, I fancy, not a few will dissent.

Natural aptitude, however, no doubt accounts for much, and, when combined with scientific skill and experience, forms the highest type of a gardener ; but such cases are exceptional. As I write, however, the name of one, alike celebrated as a flower-gardener and fruit-grower, and a few others, occur to my mind, in whom, I conceive, would be found an embodiment of this idea. Examples of the two extremes are much commoner, and we have come across one or two in both classes at different times. Falsifying names of places and individuals for obvious reasons, here is an actual portrait of what I will call, for convenience, the purely scientific type :—Tom was a master-gardener's son, and had received a good education. He was also fond of his business, laborious in taking notes, and investigating the "why" and "wherefore" of everything that came under his notice ; kept a diary of daily transactions, and was well read in the

theory and practice of horticulture and vegetable physiology, in which he took a deep interest; had 'Joyce's Scientific Dialogues' nearly by heart, could split hairs on most scientific questions, and was a match for any two or three of his mates in the bothy, in which lodged from twelve to fifteen young men. To the amateurs in the neighbourhood he was a perfect oracle, and even the minister of the parish, who had conceived a high respect for him, was entirely guided by his advice in horticultural matters. In fact, his address and intelligence, added to no inconsiderable amount of logical ability, and a civil and obliging disposition, were Tom's best passport everywhere; but as a practical workman, or in arranging or setting others to work, he was singularly incapable, and so deficient in common manipulative dexterity, that it seemed, as he used to be jocularly told, as if his "fingers were a' thooms." Was it nailing a tree, digging a piece of ground, laying box, or staking a plant—the last always a formidable undertaking for Tom—he, though painstaking in the extreme, and not without a correct idea of how it ought to be done, was inferior to the youngest apprentice. But if there was any one thing in which Tom felt his inability more than another, it was at the scythe. He could at any time demonstrate scientifically how his scythe ought to be sharpened, but it was a problem which he never could altogether solve practically; hence, he was always behind, and, as a natural consequence, took the last swath, but he would seldom be more than half-way through it until, by the force of circumstances, he would find himself in front, and the "leader" at his heels in the second "turn," when Tom had again to edge out and take up his position in the rear. At length, through his unfitness to discharge the practical duties of his situation, it was found advantageous for Tom and his master to part. He found employment in a large nursery in England, where he had not been more than a few weeks till he applied for and succeeded in getting a second foreman's place in one of the finest places in the country; but a week's experience of him so undeceived his master in the estimate he had formed of Tom from his application, that he was offered the option of staying on as a common workman or leaving: he choose the latter alternative, stayed a few months and left again for the nursery, where he remained about twelve months. He afterwards turned up "in charge of the houses" in a place in Wales, where he stayed but a brief period, left, and we lost sight of him till a few years ago, when, visiting a friend in the midland counties, we were asked if we knew Lord So-and-so's gardener, who, we were assured, was a very intelligent man, and who turned out to be no other than our old friend—in luck this time; but we had some misgivings when we learned that he had

only come recently, was greatly respected by his employer, and was going to "turn up the whole place." Less than twelve months after, a friend writes to us from London, "I was in P.'s nursery lately, and ran up against Tom. He has been there some time, and is in lodgings with his wife and child, and had just missed a good engagement through his last employer refusing him a recommendation." There was again a blank till May 1866. We were at the great International Horticultural Exhibition in London, where, amongst the first of many old acquaintances whom we encountered, was Tom, taking notes as industriously as ever. He was then in a single-handed place, and that was the last time we heard of him.

As a set-off against the above, here is another picture and an actual case, substituting fictitious names as before: Sandy was foreman in a moderate-sized place—that is, he had charge of the houses, his whole squad consisting of a boy, and Johnnie, who cleaned the stokeholes. Sandy's enthusiasm and love for his profession were only equalled by his love for tobacco. He was an inveterate chewer, and the amount he got through in the course of the week must have made a sad inroad upon his finances, and was, I believe, in exact proportion to the amount of work he had to perform. His capacity for getting through work was something enormous; day and night he seemed to be continually rumbling among pots and pans, and his skill in watering and among plants generally was something wonderful and to be admired. His master was one who laid considerable stress upon scientific attainments, but he acknowledged that the way "things grew with Sandy" was not to be accounted for by Sandy's abilities in that way, for he was woefully deficient in scientific lore, and had about as little time as inclination to reason about anything. Indeed, it was shrewdly suspected that, although Sandy did not go about his work in approved scientific fashion, his master let him have a good deal of his own way, and wisely refrained from inflicting his opinions upon him. Sandy's charge consisted of a fair collection of hard-wooded and other stove and greenhouse plants; and the few years he had charge of them was an era in their cultivation. Except in some of the London establishments, I have never seen *Anæctochiluses* in such luxuriant health; they were Sandy's pride, and there is an anecdote connected with their history which I cannot omit relating. Sandy always took an early opportunity of showing visitors the *Anæctochiluses*, and finding on one occasion on which we were there that we were not coming to his favourites in the usual course, we made inquiries respecting them. Sandy's face fell. "Oh," said he, "the maister has been readin' about a new plan of growing them. I advised him tae let them alane, but he wud shift them, and thir

nearly a' deed." And sure enough they were nearly "a' deed," and as Sandy left soon after, they did die, and have been a dead letter there ever since.

If Sandy had any particular hobby, it was for liquid manure, for which he entertained a deep veneration—not the "gardener's friend," or bottled soot—oh no! for all such he had thorough contempt, which might well be imitated in some cases—but the real home-brewed. Even guano he was suspicious of, and wary in his dealings with it; but the smell—about the only analytical test he depended upon—was a powerful argument in its favour. In all Sandy's operations his instincts seemed to be in as active operation as his reason; and if, for instance, he was selecting a piece of soil, he would throw aside that and retain this, much in the same way as a cow would crop one tuft of grass and reject another.

Had space permitted, it was my intention to have offered a few remarks on the above cases, but I must leave the subject to be commented upon by the reader. I will just observe that there is little doubt Sandy's success was due to a rare natural aptitude; and it is questionable if it would have benefited him in any other sphere than that of a humble operative. He did get a master-gardener's situation, but whether success followed him, or whether he succeeded in infusing the same peculiar faculty into others with which he was endowed himself, I cannot tell. No doubt a combination of the qualities described in the above cases would have constituted a genius. Sandy's deficiency in the intellectual ability possessed by Tom was a complete barrier to his ever exerting any influence in his profession beyond his own immediate sphere, because he lacked the ability to teach. Tom, on the other hand, wanted Sandy's rare practical insight and intuitive perception of things, and seemed to be entirely destitute of the faculty of acquiring practical details, or of conceiving the actual from the ideal. What effect equal educational advantages would have had on both it is difficult to foresee, but might be worth while to discuss. I will, however, leave it by saying, that I hope no one will infer from my remarks that I esteem lightly sound theoretical instruction, but it can be proved that that may be over-estimated at times. W.



THE CULTURE OF *LILIUM LANCIFOLIUM*.

NOTWITHSTANDING the immense popularity of the comparatively new *Lilium auratum* from Japan, the several fine varieties of *Lilium lancifolium* will always be great favourites; and most justly so, for it is a grand plant for greenhouse decoration. Great attention is paid to the

culture of this Lily in some of the midland districts, and especially in Yorkshire ; and it is astonishing what very fine examples are to be met with repeatedly at very small country shows. It is no unusual thing to meet with pots containing from five to eight roots, with from fifteen to twenty superb flowers borne on each. The plan generally adopted is to pot the roots early in February, using pots about 12 inches in diameter for three or four fine bulbs, and larger-sized pots for a larger number of roots. A good compost is formed of fibrous turfy soil, well-decayed leaf-mould, and well-rotted manure from a spent frame, all finely chopped up, but not sifted, and with some sharp sand mingled with it, so as to have a good porous soil. A good-sized crock is placed over the hole at the bottom of the pot, and a layer of small ones to the depth of an inch and a half, and over these a few lumps of fibrous soil. Many persons make a mistake in putting the bulb too near the surface. Good growers, however, fill the pot with the prepared compost to within about 5 inches of the top ; on this they place the bulb, and cover it so as to leave fully 2 inches of space above. This is done for the following reason : Those who have given any attention to the growth of the *Lilium lancifolium* must have observed the quantity of young fleshy roots sent out from the base of the flower-stem and above the bulb, and to the full development of these roots especial attention should be directed. Therefore, as soon as the shoots are a moderate height, and have become pretty firm, fill up the pot to the rim with a similar compost to that used in potting, adding a little more manure. This will give the plants an efficient topdressing, and the stem-roots will speedily strike into it, and greatly assist in the development of plentiful and large flowers. The main point in the culture of the *Lilium lancifolium* is to develop the stem-roots, a point too often lost sight of.

After potting, they should be placed in a cool shed or frame, or under the stage of a greenhouse, where plenty of light can come ; and as soon as the soil gets dry, and cracks away from the sides of the pot, sufficient water should be given to well moisten the soil without saturating it too much. Some growers are apt to start the plants into growth too early, when they become drawn, an evil that should be avoided as much as possible. Instead, therefore, of placing the pots in a warm place, they should rather be kept quite cool, and be fully exposed to the light ; for this *Lilium* is a perfectly hardy plant, and should be grown as hardy as possible. The best plan is to treat it as an outdoor plant, as far as it is possible to do so, by standing the pots out of doors after the winter is past, taking care that they be sheltered from spring frost, and biting, blustering east winds. Of course, when they are blooming they should be placed under cover in bad weather.

When they have done flowering, the pots can be placed on their sides, and as soon as frosty weather sets in, be removed to a dry shed, and be kept quite dormant, dry, and undisturbed until potting-time.

When grown in this way, a quantity of small bulbs is annually produced. These can be turned to excellent account in sheltered flower-borders; or if a bed were prepared for them in a grass plat, they would make a glorious display at the end of the summer. The small bulbs not used for potting purposes could remain in the dry soil of the pots till March, and then be planted out, placing each bulb in some soil of a similar character to that recommended for potting; and the bulbs should be placed about 6 inches deep in the bed, and about a foot apart each way. In arranging this bed, the taller-growing form of *L. lancifolium roseum* could be placed in the centre, and be edged with *L. lancifolium album*; or if this last be planted alternately with *L. longiflorum*, which produces such fine and delicate trumpet-like flowers, the fine effect of the bed will be much enhanced, and a little variation secured at the same time. Nor is there any need for the surface of this bed to be naked and open during the spring months. It might be planted (after the Lilies are placed in the bed) with some of the pretty forms of the Double Daisies, with *Aubrietias*, *Alyssum saxatile*, some of the kinds of perennial *Iberis*, *Viola cornuta*, *Polyanthus*, &c. &c., all of which would flower, and could be removed by the time the Lilies were maturing their growth. If the weather should prove to be hot and dry, a covering of well-rotted manure could be applied to the bed, as it would keep the roots moist and cool, and afford them some sustenance at the same time. The four best known and most attractive forms of *L. lancifolium* are—*L. album*, white; *L. punctatum*, white, slightly punctured with rose crimson, delicate and beautiful; *L. roseum*, white, spotted and punctured with crimson; and *L. rubrum*, white, heavily suffused and spotted with crimson, a fine and striking variety.

Quo.

NEW GRAPES.

(Extracted from the Nottingham Guardian.)

WITHIN the last few years a number of new Grapes have been introduced to public notice, all with fine characters, but some good, some bad, and some of very mediocre quality. We have abstained from pronouncing any decided opinion upon them, feeling that we should not be justified in doing so until such time as we had seen them growing in the best manner. Within the last few months we have endeavoured to realise this desire, and to that end have visited some of the gardens under the management of the most noted growers in the kingdom; and having done so, we now feel in a position to pronounce a decided conviction, and this we do with the greatest confidence. To introduce a new

fruit which has merely novelty to recommend it is not desirable. What the public want is decided quality, and above all a vigorous constitution. A new Grape which is uncertain in its bearing qualities, like the Trentham Black, or in many situations the Muscat Hamburg, is just simply deceiving the public; but taking as three distinct standards of quality the Muscat Alexandria for peculiar flavour, the Frontignans, and for general usefulness and a never-failing supply the Black Hamburg, we will measure the new candidates, as they do race-horses, by their public performances. In point of excellence it is scarcely to be expected that a thoroughly-ripened and perfectly-finished Muscat will ever be surpassed, but it is a Grape which those only who have a command of temperature, and who, moreover, know something of the secrets of Grape cultivation, can expect to finish in its most perfect state. Brought up to that standard, transparent almost as a glass of the finest amber wine, with the seeds showing almost as distinctly as the bee's wing in a glass of '32 port, this is, *par excellence*, perhaps the finest Grape in existence, and taking flavour, bearing, and keeping qualities into consideration, certainly unsurpassed, if not unsurpassable. But for some it is certainly too luscious—the flavour cloyes in the mouth; and some connoisseurs object to it, because, like the Pine-Apple, the flavour cloyes in the mouth and spoils the flavour of the wine. Therefore, to find a Grape which many say is equal in flavour, more juicy and refreshing, and withal strong in constitution, and hardy and prolific as a Black Hamburg, is certainly a decided gain. Such a Grape will be found in the Golden Champion, raised by Mr William Thomson, of Dalkeith, whose name is a tower of strength in Grape cultivation, and now being distributed by Messrs Osborn & Sons of Fulham.

We saw this Grape at the great exhibition at Leicester, tasted it, and placed it among Grapes as coeval with the Green Gage among Plums. Higher praise could scarcely be given; but then we did not know its finishing properties, but now we are able to state, upon the authority of the champion Grape-grower of the world, Mr Meredith of the Garston Vineyard, near Liverpool, it will finish as completely as can be desired, and improve in flavour to the finishing-point; indeed it is among white Grapes what the Hamburg is among black ones—the masterpiece, large in bunch, large in berry, strong in constitution, and prolific; but it has one drawback—it is not a late keeper, that is, it will not keep longer than the Hamburg, and therefore Christmas for winter use may be considered its limit. Mr Thomson honestly told us this much at Leicester; but it is a grand Grape, and no one can do wrong in planting it. We recommend it with the most complete confidence. We believe it will ripen in the same temperature as the Hamburg, and therefore is everybody's Grape. Of other new white Grapes, Foster's Seedling deserves special mention, as being large in bunch, free in bearing and setting, but not large in size of berry. The flavour is good, and it forces well in pots; but as a keeping Grape is not equal to the Syrian, White Nice, Child of Hale, and some others of that coarse-growing class. It is, however, a safe Grape for the amateur to plant, as it grows to a fine bunch without much trouble. The Muscat Treveron, a seedling of Standish's, is not bad in quality; indeed the flavour is very good, but when quite ripe the berries attain a dappled, dull, pale purple colour, which quite spoils it for table use. Our 'cute cousins across the Atlantic grow what they call the Strawberry Grape, a kind so strongly tintured with the aroma and fragrance of the Old Hautboy Strawberry as in a close house to render it quite offensive. The late Duke of Devonshire liked this Grape, and some others may do so; but much as we admire the Hautboy Strawberry, we must confess we do not covet the Strawberry Grape. Our neighbour, Mr John R. Pearson of the Chilwell Nurseries, has undertaken the improvement of this

Grape, and is most assiduously working to that end. Of several weak plants which he has fruited this season, one has a most decided Hautboy perfume and the Strawberry flavour, but not so marked as in the original variety. It is, moreover, juicy and rich, and we think may be the forerunner of some decided novelties, and, we hope, give us a new class of Grapes. Flavour in Grapes is like flavour in many other things—an acquired taste. We once knew a young lady who would drink—sip it leisurely—a glass of salts in preference to a glass of port or sherry! Few persons like even the finest claret, but they soon get to like it. Just the same will it be with a new class of Grapes—custom and perhaps fashion may lead us in that direction. Twelve months ago an intimate friend of ours sent two dishes of the Grizzly and White Frontignan for a dinner-party, and the next morning he had the compliment that the dessert was very nice, but “the Grapes a little musty,” and yet, perhaps, there is no finer Grape in cultivation than the Grizzly Frontignan. We look to Mr Pearson’s experiments with considerable interest, and a conviction that he will ultimately give us a new and desirable race of new Grapes. Of course with the Muscats we include the several varieties, such as Barnes’s, Bowood, Teyningham, Charlsworth Tokay, and Canon Hall; for though some of them may differ in appearance and flavour, any one who has got the genuine Muscat of Alexandria need not, so far as flavour is concerned, trouble about the others. Of black Grapes, the “pride of place” must certainly be accorded to Mrs Pince’s Black Muscat. This was an accidental seedling raised from the Black Alicante, crossed most likely by the Muscat. Mrs Pince had been eating some remarkably fine berries of a black Grape, from which she saved the seeds and had them grown, and the Black Muscat was the result. As exhibited by Mr Pince, the Grape, though exquisite in flavour, has always been deficient in colour—so much so, that many had the impression that it would never become really black. A few days back, however, at Garston, Mr Meredith showed us a small bunch perfectly coloured, as black and densely bloomed as the finest ripened Alicante, and more we cannot desire. This too, be it remembered, was some time prior to the full maturity of the fruit; indeed, it would take a fortnight or three weeks to ripen, so there need be no fear of this Grape attaining proper colour when properly grown. Upon Mr Meredith’s specimen Vine, which is certainly the most remarkable specimen of superlative cultivation which has ever come under our notice, the bunches were progressing most favourably, and would evidently finish in the most complete manner. This Vine was planted in the spring of 1867, in a small but properly prepared border. The stem at the present time is as thick as a man’s wrist, and the branches cover a space of 30 feet by 15 feet, and carry 23 bunches of Grapes. Additional border-room has just been added, and we doubt not another year this Vine will completely fill the training space, which must be 30 feet by 15 feet. Need we say more as to the constitution of the Black Muscat? It grows luxuriantly and fruits most abundantly. In point of quality, nothing can be finer. It is not quite so rich as the Muscats, but it is fresh, juicy, and crackling, with sufficient of the Muscat flavour to make it really delicious. The berries are produced upon strong foot-stalks, and there cannot be a doubt it will prove a first-class keeping Grape, which for flavour will put aside Lady Downes, the Alicante, and St Peter’s. Mr Meredith is about to plant a span-roofed house, 144 feet by 120 feet, with this Vine; and at Lord Derby’s, at Knowsley, a large house has already been planted. If proof were wanting that this is a really fine Grape, it may, we think, be found in the fact that Mr Meredith has at the present time upwards of 2000 of it in pots fit for fruiting next season, and nearly the same quantity of smaller plants. Of the Madresfield Court, which is said by some to

be superior to Mrs Pince, we cannot speak so positively. We saw the original Vine at Madresfield a week or two back, and tasted the fruit. It has not the constitutional vigour of Mrs Pince, at least not as seen growing at its native home. It is, however, a very handsome and excellent Grape, black as need be, and of a decidedly Muscat flavour. Bred from the Black Morocco, now wrongly called the Kempsey Alicante, it has the slender foot-stalks of that variety, and therefore we think is not so likely to prove a keeping Grape as the Black Muscat. It is, however, a kind which may be safely added to a select collection, and will prove valuable. About the Royal Scot, or Perpetual Grape, as the raiser would wish us to consider it, we can only say that so far we have failed to procure a berry to taste, and therefore can only speak from what others say. The bunches, as shown at the last meeting of the Royal Botanic Society, were nicely formed and well coloured, and the berries are well set on, but beyond that we cannot speak. The idea of a perpetual Grape is just simply nonsense. He might as well try to breed a race of perpetually-going race-horses. Perpetual motion has not been discovered yet, and Mr Standish is not going to solve the problem. Every living thing on the face of nature requires rest; and to attempt to stultify the divine law by speaking of a perpetual Grape, is preposterous. Of the Muscat Champion, as sent out by Messrs Veitch & Son, it is only necessary to say it will not colour, or, bred from the Black Damascus, it ought to be first-rate. Its best friends, however, condemn it, and therefore it would be absurd for us to recommend it. One other novelty we saw a few days back in the garden of Earl Sefton, Croxteth, near Liverpool. This was named Black Gibraltar. It was a fine refreshing Grape of oblong form, with a taste of the Muscat. The bunches were small and the berries loose, but the Vine was weak, and therefore we must not judge it on that point. It is deserving of further trial, and, we think, may yet prove a desirable variety.



DRUMLANRIG GARDENS.

MR M'INTOSH has resigned the management of these splendid gardens, which he has held, with great satisfaction to his noble employers, for a period of twenty-eight years. The flower-gardens were in great measure laid out under Mr M'Intosh's superintendence, and the forcing-gardens were remodelled by him some twelve years ago. He left Archerfield to go to Drumlanrig; and it is not a little singular that he is succeeded by Mr D. Thomson, also from Archerfield, in whose hands we are no way afraid that the fame of Drumlanrig will suffer. He, in his turn, is succeeded at Archerfield by Mr Kettles, for some years foreman to Mr Fowler at Castle Kennedy, whose career at Archerfield we trust may be a prosperous one.



Notices to Correspondents.

D. M'C.—If your seedling Geranium flowers freely when planted out, it will supersede Christine. The truss is much finer and the habit equally good. We think highly of it.

J. M., Dundee.—The height and construction of your vinery in no way unfits it for Grape cultivation. If the evaporating trays are properly fixed to the

pipes, they will keep up ample moisture in the air when fire is used. When it is not, sprinkle the soil of the border two or three times daily. The supply-pipe of the tray should spring from the flow-pipe, and the return one should go into the return-pipe. Unless this is the case, there will not be a proper circulation in the tray, and consequently little moisture will be given off.

M. S.—The best time for removing your espalier trees is as soon as the leaves drop. We are not of opinion that you will get a crop of fruit next year from trees the stems of which are 20 inches in circumference, if moved as you propose. Their having been previously root-pruned is greatly in their favour. Transplant one at a time, so as to keep the roots out of the soil as short a time as possible. Save every rootlet from injury.

AN ULSTER READER.—In the case of *Calceolaria Sultan*, strike cuttings of the young wood in autumn, and grow them on during winter and spring, and they will not go off as you say they have hitherto done with you. The only way of keeping the other varieties you refer to free from dead leaves, is to stake them out well, and keep the house they are in dry and thoroughly ventilated; and if a few dead leaves make their appearance, pick them off.

W. S. M. D.—It is difficult to say what is and what is not "perfectly hardy" in our climate. With us here the East Lothian stock stood the winter outdoors perfectly well last winter, but it may not do so next winter. If you pot them now and keep them in a frame they will repay your trouble by a grand display of bloom in early summer. Such a winter as last, *Euonymus radicans variegatus* and *Chrysanthemum* will stand outdoors in a sheltered position, but they may get killed if the weather is severe.

P. D.—Your fruit has come to hand. No. 44 is *Maria Louise*, 52 is *Beurré Rance*, 109 is *Glou Morceau*, 119 is *Charmontel*, 186 is *Autumn Bergamot*, 55 is *King of the Pippins Apple*, 375 is *Lord Suffield*, 88 is *Ribston Pippin*. The other two Pears and four Apples we do not know the names of, but we will endeavour to find them out.

P. M.—The bark of your Pear and Apple trees sent us is covered with the scale that not unfrequently infests Pears especially. It is very injurious to them. As soon as the leaves are off the trees, loose them from the wall; burn all the shreds and wash the wall with boiling water, taking care not to let it touch the trees; then with a brush dress every part of the bark of the trees except the buds with train-oil three parts and one part spirits of tar.

A SUBSCRIBER.—You ask us "how red-spider can be got rid of when it has infested a cucumber-frame? Painting has been tried without success." This surprises us. If the wood has been painted, the glass washed, the brickwork, if there is any, white-washed with hot-lime wash, and the old soil removed, we guarantee that the spider must be annihilated for the time being.

The Royal Muscadine Grape will suit your purpose well.




THE GARDENER.

DECEMBER 1868.

THE ROSE.

(Continued from page 464.)

CHAPTER V.—SOILS AND MANURES.

“HAT a constitution must that air and soil of Herefordshire give the Rose!” So wrote Dr Lindley, praising the beautiful blooms which Mr Cranston brought from the King’s Acre, by Hereford city, to the first grand National Rose Show. And we aliens read with envy. Rivers and the Pauls, and Lane, and Francis, gazed sorrowfully a while on the *t* in Hertfordshire; from Sussex, so it seemed to Messrs Wood and Mitchell, all success had fled; “So much for Buckingham,” sighed Mr Turner from the Slough of his deep despair; in Wiltshire, even Keynes, the stout-hearted, looked ruefully for a moment on his fair garden as though it had been Salisbury Plain; in Essex, Mr Cant was mute; and as these great leaders of Queen Rosa’s armies were seized with a brief despair, we privates and non-commissioned officers were not what we should have been with regard to knees, and felt a sudden conviction that the time had come when we ought to retire from the service. That gust which caused the light to flicker in our grand chandeliers and lamps, all but blew out for ever our rushlights and farthing dips.

It was but a gust and a surprise. “It was a moment’s fantasy, and as such it has passed.” Those generals, whose eyes blinked for a second as they read of the superior powers of Hereford, have since won glorious victories, each for his shire. Cheshunt and Colchester, Salisbury and Slough, again and again have gained the pride of place;

and not until 1867 did the victor of 1858 resume his championship among the chiefs. Enough, surely, for one man's ambition, twice in a decade to achieve such a conquest !

There are no duties upon sunshine, there are no monopolies in air ; and there are thousands of acres, both sides the border, as genial for the Rose as the King's by Hereford—nurseries and gardens in every part of Victoria's realm, from which Mr Cranston, or any other man, with his fondness for the flower and persevering skill in its culture, may grow it in all its glory.

But idleness and ignorance will not believe it. They prefer the stolid conviction that the stars in their courses fight against them, that meteorology and geology are their bitter foes. Look over your garden-wall with a beautiful Rose in your coat, and your neighbour, loitering with his hands in his pockets, knee-deep in groundsel, amid his beds undrained, undug, will sigh from the depths of his divine despair, "What a soil yours is for the Rose !" Some of my own friends talk to me regularly as the summer comes, not as though I had any special fondness or took any special pains, but as if my garden *would* grow excellent Roses whether I liked it or no. At first, and as a neophyte, I used to feel a little irritation when all the glory was given to the ground ; and I remember upon one occasion that I could not refrain from informing a gentleman, who bored me with the old unchanging commentary, that wild Rose-trees transplanted from the hedgerow to my garden in the autumn grew flowers large enough for exhibition the next summer but one. It was the simple fact concerning budded briars, but he took away the inference, which I blush to own was meant for him, that the transformation was effected by the soil solely ; and he was very angry, I heard afterwards, when his views on the subject were not universally accepted by a large dinner-party in his own house.

How often has it been said to me, "Oh, what a garden is yours for Roses ! We have a few nice flowers, but of course we can't compete with you. Old Mr Drone, our gardener, tells us that he never saw such a soil as yours, nor so bad a soil as ours, for Roses." And herein is a fact in horticulture—Mr Drone always has a bad soil. An inferior gardener, whether his inferiority is caused by want of knowledge or want of industry (the latter as a rule), is always snarling at his soil. Whatever fails, flowers, fruits, or vegetables, shrubs or trees, the fault rests ever with the soil. Hearing some of these malcontents declaim, you would almost conclude that a tree, planted over night, would be discovered next morning prostrate over the wall upon its back, eliminated by the soil in disgust. Only by superhuman efforts, they will assure you, combined with extraordinary talent, can anything be

induced to grow but weeds. The place might be, like Hood's Haunted House,

" Under some prodigious ban
Of excommunication"—

a place from which Jupiter had warned Phœbus and Zephyrus, and Pomona and Flora, on pain of hot thunderbolts. They come there, of course, from a spirit of disobedience, but only on the sly and seldom. The old, old story—the muff, coming from his wicket with a second cypher, and blaming the uneven ground, the ball which "broke in" with a wild defiance of every natural law, and baffled all that science knew; the bad shot, whose "beast of a gun" is always on half-cock, when the rare woodcock comes, and on whose eyes the sun sheds ever his extra-dazzling rays; the bad rider, who "never gets a start" (nor wants one), and whose fractious horse "won't go near the brook" at the very crisis of the run.

The good gardener, on the contrary, the man whose heart is in his work, makes the most of his means, instead of wasting his time in useless lamentations. He knows that this world is no longer Eden, and that only by sweat of brow and brain can he bring flower or fruit to perfection. "Let me dig about it and dung it," he says of the sterile tree; knowing, as He knew who spoke the words more than eighteen hundred years ago, that to prune and to feed the roots is to reclaim and to restore, wherever there is hope of restoration.

No long time ago, and while the judges at a flower-show were making their awards, I strolled with two other exhibitors, gardeners, into a small nursery-ground, not far distant. My companions were strangers to me, but still more strange to each other, for they seemed to differ in all points, as much as two men having the same vocation could. The one was of a cheerful countenance and conversation, ruddy with health, lithe and elastic as a hunter in condition; the other ponderous, morose, flabby. Not knowing their real appellations, I named them in my own mind Doleful and Gaylad, after two foxhounds of my acquaintance. Doleful soon found the fox he wanted,—something to decry and depreciate; and he gave tongue with a deep melancholy howl, which might have been the last sad wail of poor Gelert. Gaylad simultaneously, but in an opposite direction, went away with *his* fox,—something to admire and praise; but his tone was full of mirth and music, and he seemed thoroughly to enjoy the sport. Doleful had just growled to me in confidence that he "wouldn't have the place as a gift," when Gaylad pronounced it "a jolly little spot," and told the occupier, who was hard at work, that his nursery did him credit. I found out, as we returned, that these two men were competitors in the same class; and I found,

as I anticipated, on entering the show, that Gaylad was first and Doleful nowhere. Subsequently, at the dinner, and as I again expected, Mr Doleful informed us that his defeat was to be attributed entirely to the wretched nature of his soil ; a remark which was received with a graceful silence by the company in general, and by Mr Gaylad in particular with a festive wink.

Some soils, we all know, are naturally more beneficent than others, but gardening is an art ; its primary business

“ To study culture, and with artful toil
To meliorate and tame the stubborn soil ; ”

and its success certain, wherever this *cura colendi* is undertaken by working heads and hands. I know of only one soil in which the attempt to grow grand Roses would be hopeless—a case of “Patience, sitting by the pool of despondency, and angling for impossibilities,” with never a nibble—and that is the light barren sand called “drift” and “blowaway,” of which the clay farmer said derisively that it might be ploughed with a Dorking cock and a carving-knife ! Mud, we are told in Mortimer’s ‘Husbandry,’ makes an extraordinary manure for land that is sandy, but this gritty rubbish demoralises whatever comes. You may expel nature with a muck-fork on Monday, but on Tuesday morning she will be back, and grinning.

This exception, however, only proves the rule, that difficulties must yield to cultivation, and to free trade in soil. This is, no doubt, a matter of Radical Reform (*radix*, genitive *radicis*, a root), but the Conservatories have taken a decided lead in it. The growers of stove and greenhouse plants collect their material from all quarters ; from India, the fibres of the cocoa-nut ; their sand from Reigate ; their peat from Seven-Oaks ; their leaf-mould, their Sphagnum and other mosses, from forest and bog ; their top-spits from the rich old pasture ; their manures, natural and artificial, from Peru to the farmyard. They stand in their potting-sheds surrounded by these varied articles of home and foreign produce, even as the men of Gunter, among the rich ingredients of the matrimonial cake. Regard, too, the perfect drainage provided for these plants ; no chronic saturation, dangerous to life, as all dropsies are ; no perpetual conflict between air and water ; but each exercising its function in peace. And yet many a man, who knows all this, and practises it *within* doors, stands helpless and hopeless on the soil *without*. I have walked out of houses where Orchids and stove plants, and even those hard-wooded inmates of the greenhouse which so thoroughly test the plantsman’s skill—those *Ericas*, for example, which come indeed from the Cape of Good Hope, but too often bring dark despair—were all in admirable condition, and have

been told, as I stood upon soil the facsimile of my own, and better, "We can't grow Roses." There is only one reply,—“You won't.”

Because I know that Roses may be grown to perfection in the ordinary garden-soil, if they have such a position as I have described in the preceding chapter, and if that soil is *cultivated*—I don't mean occasionally tickled with a rake, or sprinkled with manure from a pepper-box, but thoroughly drained, and dug, and dunged. I am not theorising, nor playing the game of speculation with my readers—not writing from a fertile soil, regardless of the difficulties of others, like the Irish absentee, who, dating from his cosy club in London, thus addressed his agent in a dangerous, disaffected district—“Don't let them think that, by shooting you, they will at all intimidate me;” but I have proved that which I preach in practice. Upon two soils as different from each other as soils can be, though only separated by a narrow stream, I have grown Roses which have won the premier prizes at our chief “All-England” Shows. On one side of the brook the ground is naturally a strong, red, tenacious clay; on the other, a very light, weak, porous loam, with a marly subsoil.

The first thing to do with a cold adhesive clay is to drain it, and to drain it well. When water stagnates around the roots of a plant, they cannot receive the air or the warmth which are alike essential to their health, nay life. Cut your drains, with a good fall, straight and 4 feet deep; and do not forget, when you have got them, to look from time to time, in seasons of wet, whether or no they are doing their duty. Use tiles, not faggots, which soon, in most cases, become non-conductors.

Having provided channels of escape for the superabundant moisture, make it as easy as you can, in the next place, for the moisture to reach them. Trench your ground, and, by exposing it to atmospheric influence, make it as porous and friable as you can. Then consider what additions you may introduce to its improvement. “Anything,” writes Morton, in his work upon the ‘Nature and Property of Soils,’ “which will produce permanent friability in clay soils, such as sand, lime, burnt clay, loose light vegetable matter, or long unfermented manure, will alter its texture and improve its quality.” Of these, having tried them fairly, I have found that which is happily the closest to our hand (like a thousand other privileges and blessings, had we but eyes to see them) to be the most advantageous—I mean burnt clay. Some of our modern writers and lecturers speak of it as of a recent discovery, but the Romans knew it, and used incinerated soils two thousand years before Sir Humphry Davy wrote,—“The process of burning renders the soil less compact, less tenacious and retentive of moisture; and, properly applied, may convert a matter that was stiff, damp, and in consequence

cold, into one powdery, dry, and warm, and much more proper as a bed for vegetable life." Let those rosarians, therefore, who have heavy tenacious soils, having first tapped their dropsical patients by drain and trench, promote their convalescence on the homœopathic principle, *similia similibus curantur*; or, if they distrust the more novel treatment, let them follow the ancient laws of cauterization, and burn their clay. And with this object let them save everything, as we were wont to do in our school-days when the festival of Fawkes drew nigh, for a bonfire. Keep the prunings of your rosary, that new Roses, like the Phoenix, may spring from the funeral-pyre; preserve all other prunings, decayed vegetables, haulm, roots, refuse, rubbish, weeds,—

" Since naught so vile, that on the earth doth live,
But to the earth some special good doth give,"—

and when you have a goodly omnium-gatherum, make ready your furnace. Arrange your thorns and more inflammable material as a base, then an admixture of more solid fuel from your stores, lightening and condensing alternately, and in the centre disposing some large *pièces de résistance*, such as old tree-stumps, useless pieces of rotting timber, and the like, which, once fairly on fire, will 'go smouldering on for a fortnight. On this heap, well kindled, and around it, place your clay, renewing it continually as the fire breaks through. The pile must be watched so that the flames may be thus constantly suppressed, the clay burnt gradually, and not charred to brickdust. "The ashes of burnt soil are said to be best," writes Morton, "when they are blackest; black ashes are produced by slow combustion, and red ashes by a strong fire." Mix these ashes with the parent soil, and then there remains, so far as the soil is concerned, but one addition to be made, and of this we will treat presently.

First crossing, if you please, the little bridge which divides my Rose-gardens, and passing over the narrow streamlet, from a cold clay soil, fertilised by cultivation, to a light, porous, feeble loam, best described by a labourer digging it, when he said, "it had no more natur in it than work'us soup." Nor was it ever my intention to try Roses in this meagre material, until a friend happened one day to say of it, "No man in England could grow Roses *there*." Then, fired by a noble ambition, or pig-headed perverseness, whichever you please, I resolved to make the experiment. I took a spade as soon as he was gone, for a happy thought had struck me, that this soil might resemble that boy-beloved confection Trifle, which, thin, frothy, and tasteless in the upper stratum, has below a delicious subsoil of tipsy-cake and jam. So I found out in my garden, not far from the surface, a dark, fat, greasy marl, rich as the nuptial almond-paste, and which looked

as though the rain had washed all the goodness of the ground from above. The lean and the fat, the froth and the preserves, were soon mixed by the agency of the spade; and in this soil, trenched and exposed to the air for a few weeks afterwards, I planted my Briers. Then followed the manure, of which I have yet to speak, and in due course the Roses. These in their first summer, 1865 (I do not chronicle my success from egotism, but as facts for the encouragement of others), won the two first prizes at Birmingham, and two seconds at the Crystal Palace, with very little assistance from their allies over the water; in 1866-67 they were of medium quality; and in 1868 enabled me, almost exclusively (the blooms being from "maiden" stocks—*i.e.*, from buds of the preceding year), to win fourteen first prizes out of sixteen collections shown, including that which I consider the champion prize of all, the first awarded to amateurs at the Grand National Show of the Royal Horticultural Society.

In this case, as with the heavy clay, the remedy lay close to the disease; and in very many similar cases it will be found that, by intermixing the stronger and more tenacious subsoil with the surface, fertility may be secured. If not in actual proximity, the element required for a defective soil—clay, for example, when sand predominates—may be procured generally at no great distance, and may be fetched in a waggon or a wheelbarrow, in accordance with ways and means. Let Horticulture in this matter learn a lesson from her younger sister; and let the gardener who is whimpering over his rood of unkindly soil remember what the farmer has done and is doing, the wide world over, amid the forest and the fen. And such pusillanimity is specially comic in the case of a Scotsman or Englishman, who is surrounded by a thousand proofs of triumphant cultural skill; who may walk, from dawn to dusk, among golden corn, where once the antlered monarch spent his life, unscared by hound or arrow; among flocks and herds, knee-deep in herbage, where fifty years ago the blackcock crowed amid the purple heather, where

"The coot was swimming in the reedy pond,
Beside the water-hen, so soon affrighted;
And where, by whispering sedge, the heron, fond
Of solitude, alighted."

"Richard," thus I spoke to the indolent and obese proprietor of a small freehold in my neighbourhood, who was complaining to me that his garden, about as highly cultivated as Mariana's at the Moated Grange, was viciously and desperately incapable of producing anything but "docks"—"Richard, your forefathers have helped to reclaim the greater part of Sherwood Forest, while their neighbours were draining

the Lincoln fens ; and I should almost have hoped, taking into account the discoveries of modern science, that you might, in a favourable season, have educed a few Potatoes even from the depraved material before us." But he didn't seem to see it.

Wherefore, I would ask to narrate, in antithesis, and to take away, as it were, a nauseous flavour—like the Fig which followed the castor-oil of our youth—another small incident. The "navvy" is not commonly a man of floral proclivities, but I met with a grand exception a few years ago in the leader of a gang then working upon one of our midland lines. When the work was done, and the band dispersed, he applied for and obtained a gate-house on the rail, and to that tenement was attached the meanest apology for a garden which I ever saw in my life. Knowing his love of flowers, I consoled with him at the beginning of his tenancy ; but he only responded with a significant grunt, and a look at the garden, as though it were a football and he was going to kick it over the railway. It seemed to me a gravel-bed, and nothing more. Twelve months after I came near the place again—was it a *mirage* which I saw on the sandy desert ? There were vegetables, fruit-bushes, and fruit-trees, all in vigorous health ; there were flowers, and the flower-queen in her beauty. "Why, Will," I exclaimed, "what have you done to the gravel-bed ?" "Lor' bless yer," he replied, grinning, "I hadn't been here a fortnight afore I *swopped it for a pond*." He had, as a further explanation informed me, and after an agreement with a neighbouring farmer, removed with pick and barrow his sandy stratum to the depth of 3 feet, wheeled it to the banks of an old pond, or rather to the margin of a cavity where a pond once was, but which had been gradually filled up with leaves and silt ; and this rich productive mould he had brought home, a distance of 200 yards, replacing it with the gravel, and levelling as per contract. Some other neighbour had given him a cartload of clay, and the children had "scratted to'ether a nicst bit o' muck, and he meant stirring up them cottagers at next show with Roses and Kidneys too."

It occurred to me, as I rode home reflecting, that there was a striking similarity in this case, as in many others, between the gardener and his ground ; for Will had been at one time a drinking, poaching, quarrelsome "shack," and was now a good husband, a good father, and, I believe, a good Christian ;—the gravel had been converted into loam. And is there not much resemblance between ourselves and our soils—the soil without, and that soil within which the Psalmist calls "the ground of the heart" ? No two characters, and no two gardens, exactly alike, but all with the same natural propensity to send up wild oats and weeds, and to send their tap-roots downwards ; all requiring

continuous culture, training, and watchful care ; all dependent, when man has done his best, upon the sunshine and rains of heaven. "Soils," writes Loudon, "not kept friable by cultivation, soon become hardened ;" and so do hearts. But from ourselves, as from our soils, we may eject the evil, introducing the good in its place ; we may grow Roses instead of weeds, if we will. "Upon the same man," writes Richter, who was a florist as well as a philosopher, and seldom appeared in the streets of Bayreuth without a flower in his coat, "as upon a vine-planted mount, there grow more kinds of wine than one : on the south side something little worse than nectar, on the north side something little better than vinegar." But we may level the hill by humbling our pride, and so lay open the whole vineyard before the summer sun.

I pass now to the consideration of a subject which I believe to be the most important of all to those who desire to grow Roses in perfection.

S. REYNOLDS HOLE.



NOTES ON NEW VARIETIES OF FRUIT.

GRAPES.

New Grapes have appeared of late pretty quick among us—some particularly great acquisitions, some no better than what we previously possessed, and others not so good. In this paper it is only the varieties raised in Britain that I shall notice, leaving imported varieties for a future paper. I will begin with the Duchess of Buccleuch—to my fancy, when thoroughly ripe, the finest Muscat-flavoured Grape grown. Its long tapering bunches and fine shoulders have a fine appearance, and its colour—good, a light yellow when properly matured—thin skin, and very rich juicy round berries, cannot fail to please. Perhaps the berries are too small for some ; but I am of opinion that they can be improved by grafting on proper stocks, as is the case with the Muscat Hamburg. It will succeed in a cool vinery, and can be grown in any ordinary house.

Muscat Champion.—Bunches large, well shouldered ; berries large, oblate, black, with a slight bloom ; flesh tender, juicy, with a Muscat flavour ; skin thick. This is a fine showy Grape, but is deficient in the true black or dark-purple colour looked for in Black Grapes, as it frequently fails to colour up to the stalk, and is a dirty black. It also requires considerable heat to bring it to maturity.

Royal Ascot or Perpetual Vine.—Bunches medium size ; berries medium, sweet and juicy. Much has been said about the wonderful

properties of this Grape, which I have as yet failed to discover, as I consider it only a second-class Grape, as we have many others infinitely better. Why the appellation of "Perpetual Vine" should be affixed I know not; if any Grape has a claim to that title, it is the Ischia or Noir Précoce de Gênes, as it will produce three crops in a season. This Grape has been well bolstered up by the Fruit Committee of the Royal Horticultural Society; at the same time it can be well dispensed with.

Madresfield Court.—This is a good Grape, with good-sized bunches and fine oval berries with a rich Muscat flavour, and is an excellent Grape; at the same time it will have to give way to the following:—

Mrs Pince's Black Muscat.—Bunches large, tapering, well shouldered, and stout foot-stalks; berries medium-sized, oval; skin thick, deep purple, with a thin bloom; flesh firm, vinous, sweet, with a rich Muscat flavour. This is decidedly the greatest acquisition we have had among Black Grapes for some years. It is remarkably vigorous, hardy, and sets well in a cool house, and will hang as long as any Grape known. It deserves a place in the smallest establishment.

Golden Champion.—This remarkably fine Grape only requires to be known, when it will find a place in the most select collections. Bunches large, beautifully formed; berries large, oval, of a bright-gold colour when perfectly ripe; flesh tender, juicy, sweet, having a peculiarly delicious flavour indescribable. Undoubtedly the finest White Grape known. In many places it will supersede the fine old Muscat, as it can be grown with certainty of a good bunch, being a very free setter. This and the preceding Black Grape will turn out many an old Vine long cherished.

To the above I may mention that there is yet another Black Grape, which I for the present will call the "Great Unknown;" it is an importation from one of our colonies, and, if it keeps up its character, will cause no little sensation when it makes its *début*.

PEACHES.

Great additions and improvements having taken place in the above fruits within the last few years, a few remarks on some of the best may be of use to your readers about to plant.

By the addition of some of the following to the old varieties—as Barrington, Bellegarde or Galande, Late Admirable, Malta, and Noblesse—the season can be prolonged to near eight months, by the use of glass and heat in various forms. Many of the new ones are of large size and exquisite flavour, as well as great beauty—in fact, cannot well be spared in large gardens.

1. Dagmar.—Large, rich, and melting; very handsome, being a rich crimson

on a light-straw ground ; very downy ; flesh white, very tender ; flavour rich and vinous ; glands round ; flowers small. Ripens early in August.

2. *Early Silver*.—Very large, very beautiful ; skin a fine cream with a pale-pink blush next the sun ; flesh white, juicy, and melting ; flavour brisk and very grateful ; glands kidney-shaped ; flowers large. August. Forces remarkably well.

3. *Lord Palmerston*.—One of the largest Peaches known ; skin white, with a little red next the sun ; flesh firm and very rich ; glands kidney-shaped ; flowers very large and beautiful. Ripe from the middle to end of September.

4. *Stump the World*.—This is perhaps the largest Peach known. Skin yellowish-white, and a fine red next the sun ; flesh melting, white, very juicy and delicious ; glands round ; flowers small. This grand fruit is from America ; very vigorous, and a great bearer. I consider it one of the greatest acquisitions we have had for years.

5. *Prince of Wales*.—Very large ; skin very downy, green, dark-red next the sun ; flesh very tender, juicy, rich, sweet, and vinous ; glands kidney-shaped ; flowers small. Middle of September.

6. *Desse Tardive*.—Large ; skin pale-green, slightly tinged with red on the sun side ; flesh greenish-white, melting, very juicy, rich, and vinous ; glands round ; flowers small. Beginning of October. This is one of the best late Peaches.

7. *Princess of Wales*.—Very large ; skin cream-coloured, shaded with very pale blush ; flesh melting, juicy, and high-flavoured ; glands round ; flowers small. November. This is the latest good Peach I know, and deserves attention, as it is the last to prolong the season.

Yellow Peaches.—Some of the Yellow Peaches are well worth cultivation, as some really good and valuable fruits are to be found among them. I believe the earliest and latest Peach is to be found in this section, and their beauty adds wonderfully to the appearance of the dessert.

8. *Frogmore Golden*.—Medium-sized, deep yellow, and red next the sun ; flesh tender, rich, vinous, and very juicy. End of July.

9. *Crawford's Early*.—Very large ; skin light-yellow, orange-red next the sun ; flesh yellow, tender, and melting, remarkably juicy, vinous, and delicious ; glands round ; flowers small. This valuable Peach deserves extensive cultivation. End of August.

10. *Exquisite*.—Very large ; skin yellow, dark-red next the sun ; flesh yellow, veined with red, melting, rich, and juicy ; glands round ; flowers small. September. This superb fruit is deservedly named *Exquisite*, and should be in every collection.

11. *Dr Hogg*.—Large ; skin thin, deep lemon, shaded with red next the sun ; flesh yellowish, melting, rich, sweet, and brisk ; glands kidney-shaped ; flowers large. Ripe in August. A very valuable variety for general purposes ; it bears carriage as well as the *Malta*.

12. *A Bec*.—Large ; skin yellow, with dark-crimson next the sun ; flesh white, melting, sweet, and tender ; glands round ; flowers small. End of August. A fine large early Peach.

There are several other new Peaches—as the *Honey*, a very sweet Peach from China ; *Susquehanna*, *Lady Palmerston*, *Nectarine Peach*, and *Early Rivers*—but

not having an opportunity of judging of their merits, I only name them that those who are curious in such things may obtain them if they think proper.

NECTARINES.

1. Albert (Rivers's).—Very large; skin light-green, with pale red next the sun; flesh pale red, melting, juicy, with a rich vinous brisk flavour; glands kidney-shaped; flowers large. September.

2. Pine-apple.—Large; skin deep orange and dark-crimson cheek; flesh yellow, transparent like a Pine-apple, very rich and brisk; glands round; flowers large. September.

3. Prince of Wales.—Very large; skin dull green, with dull red next the sun; flesh deep red next the stone, very rich, vinous, and refreshing; glands round; flowers small. September. Perhaps more tender than some.

4. Stanwick Elruge.—A good substitute for the old Stanwick, as it possesses all its good qualities without cracking.

5. Rivers's White.—Large; skin white, with pink cheek, covered with a delicate bloom; flesh white, melting, rich, and vinous; glands kidney-shaped; flowers large. Perhaps the most beautiful Nectarine grown. Requires a warm situation, and forces well. End of August.

6. Albert Victor.—Large (perhaps the largest known); skin deep green, with a dull-red cheek; flesh rich, melting, and refreshing. Middle of September. Not having cultivated this variety, I trust to the word of Mr Rivers and what I have seen.

THOMAS SHORTT.



NOTES ON HARDY HERBACEOUS PLANTS.

CORONILLA.

THIS is a small family of Pea-flowering plants containing a few sorts of considerable beauty. The genus is chiefly European. Two species, *C. cretica* with scarlet flowers, and *C. securidaca*—now known as *Securigera coronilla*—with yellow flowers, are old-fashioned but pretty hardy annuals; seven or eight are dwarf handsome hardy or half-hardy shrubs, and the remainder are ornamental herbaceous plants with somewhat woody stems, and very generally procumbent or trailing habit of growth, in some species also evergreen. As a rule they object to being moved about; when well established they should be left undisturbed unless necessity steps in and orders it otherwise. They prefer a light, dry, rather sandy loam. They may be increased by division, cuttings, and seeds—the former method is best done early in spring, before growth commences; the cuttings should be taken before the shoots harden too much or run too much to flower, and be inserted in sand and loam on a spent hot bed, or in a cold frame; the seeds are best sown in slight heat in March, transplanting and hardening off as early as possible.

C. varia.—This is the finest of the hardy herbaceous sorts, and is a charming plant of prostrate, almost creeping, habit of growth. It reaches the height of about a foot, and blossoms most profusely throughout the months of July, August, September, and October, and often also into November if the situation is a warm one, or the weather mild. The flowers are borne on slender footstalks in heads, and are pink in varying shades, often almost white. The rockwork and mixed border are its most suitable positions, but it is not unaccommodating, and adapts itself to any situation readily enough, provided the soil is not very adhesive and moist.

C. varia var. *compacta*.—This variety differs from the species only in having, as the name implies, a more compact and restricted habit of growth, a quality which will perhaps recommend it for special purposes, and on that account it is noticed here along with the species.

C. iberica reaches the height of 6 or 8 inches with procumbent, almost trailing, stems, which are somewhat woody, but deciduous. The flowers are yellow in small but numerous heads, and appear in July and August. It is a pretty little plant, most fit for rockwork decoration, as it is rather difficult to preserve in health in the open border.

C. minima is very nearly related to the last-named sort, but is more herbaceous, and more or less evergreen. The flowers are produced in small heads and are yellow; they appear in June and July. Light sandy loam and peat form the best compost for both this and the preceding sort. Native of various parts of Europe, chiefly the south, being found in dry rocky places on the mountains, and in upland pastures.

C. globosa grows about a foot high, and is profuse in the production of its heads of white flowers, which appear first in July, and continue in greater or less abundance on till November. The stems are procumbent at the base, and rather woody in texture. It is very accommodating as regards soil and situation. Native of Crete.

ASTRAGALUS.

This family of Pea-flowers is a most numerous one, comprising, as it does, upwards of 100 species; and its geographic range is very extensive—almost universal. The species are spread in greater or less abundance over the central and northern parts of Europe and Western Asia, and in the rocky hot districts of the region of the Mediterranean they are abundant; while across the Atlantic they are distributed from the southern slopes of the Andes throughout the country northwards, and advance far into the arctic regions. The value of the family for the purposes of decoration is, considering the large number of species which it contains, not high. A very large

proportion of the species are Alpines, pretty in many cases, but generally more curious than pretty, which, under ordinary out-of-doors cultivation, prove in most places rather unmanageable. A few are remarkable for singularity of appearance; of these the most notable is *A. tragacantha*, the petioles or leaf-stalks of which are persistent, or adhere to the branches long after the leaflets have fallen, and become hard and spinelike; and as they are numerous, dense, and long, the plant has a rather forbidding touch-me-not look about it. The more ornamental sorts are best adapted for clothing rockwork. They prefer light sandy loam, and will succeed well in the open border where such soil is natural. All are very averse to frequent removals, and should not be disturbed when fully established and doing well. Propagate by seeds, and by cuttings when the latter can be had; division is neither a safe nor a speedy method of increase with the species generally—but seeds are produced in such abundance as will meet all ordinary requirements.

A. monspessulanus is a beautiful dwarf plant of neat dressy appearance, rarely rising to a greater height than 9 inches. The branches are almost prostrate at the base, and are clothed with handsome, somewhat hairy, pinnate leaves; and the flowers in long dense prostrate racemes are bright reddish purple, and appear in July and August. This is a very choice plant, and succeeds well cultivated in the mixed border, where the soil is light and dry. There is a white-flowered variety, well worth a place, for contrast's sake, in extensive places. Native of the south of France.

A. leontinus is a very neat pretty plant, with the habit and general appearance of the last-named sort, but even more prostrate; the leaves also are more hairy. The flowers are cream-coloured, in dense prostrate spikes; they appear in May and June. This species succeeds well in any moderately sunny position if the soil is congenial, but it is best fitted for ornamenting rockwork. Native of Austria.

A. hypoglottis is even a smaller plant than the last, and less hairy, and quite prostrate. The flowers are pale or bluish purple, in short spikes on slender prostrate footstalks, and appear in June, July, and August. It succeeds best on rockwork. Native of Europe—is British—Asia and North America. There is a white variety of this sort well worth a place.

A. purpureus has nothing in its character superior to either of the foregoing, but the colour of the flowers is dark purple, and on that account it may be useful. It flowers in June and July, and is a native of the south of France.

A. alpinus is very distinct from either of the foregoing. It is prostrate and hairy, but the branches are often about a foot long; and

instead of being in spikes the flowers are in racemes, and droop from apex to base; the colour is bluish purple tipped with white. It is decidedly an alpine plant, and succeeds best on rockwork. Native of Britain, but rare; also mountains of Europe generally, but not in the South and Western Asia. The flowers appear from June throughout the remainder of summer.

A. onobrychis.—This is a taller and more elegant plant than either of the preceding, reaching the height of a foot or 18 inches. The flowers are purple in dense spikes, and are produced in June, July, and August. It is very suitable for the mixed border, but being of trailing habit, it is also desirable for the rockwork.

ANTHYLLIS.

This genus contains few species. They bear some superficial resemblance to *Astragalus*, and in cultivation require the same treatment; botanically, however, they are very distinct. In these the inflorescence is usually capitate, rarely spicate, and never racemose; and under the heads of flowers there is a more or less conspicuous leafy tract. The genus is European.

A. montana is about 6 inches high, of trailing habit, with fine pinnate hairy leaves and dense heads of pink flowers, which appear in May and throughout June and July. It is a very choice little rockery plant. There is a white-flowered variety very desirable but rare. Native of the south of Europe.

A. vulneraria.—This is our native *Woundwort*, and is an excellent type of the genus. Like the preceding it is prostrate in growth, and trailing, and is usually densely clothed with soft silky hairs. It is rather variable in the colour of its flowers, varying in contiguous individuals from pale yellow to red; and occasionally in the same individual these variations are noticeable. There is a permanent variety with creamy-white flowers, and another with dark-red flowers, which are desirable but rare.

A. polyphylla and *A. Dillenii*, if not mere varieties of *A. vulneraria*, are too much like it in appearance to merit a place in any but botanical collections.

W. S.

HINTS FOR AMATEURS, DECEMBER 1868.

IN the vegetable garden there can be little further advice given than what was offered last month: however, when weather will permit, nothing should be left undone that would lighten the work of the busy

months, besides the great advantage to the soil in having it sweetened and ready for cropping. Many of the failures with seeds not appearing through the soil in spring, can be attributed clearly to bad management: the nurseryman who may have supplied the seeds often being blamed when sour unhealthy soil has destroyed the vitality of the seeds. Trenching and digging may be carried on wherever there is any vacant space. Manure may be wheeled on in ridges or heaps, and covered over with soil to prevent waste. Where Peas were grown in single rows, and the ground planted closely between them, will be convenient spaces for laying down ridges of manure ready for use when the crops are used up. All seeds left over from last season should now be examined, and those known to be sound should be put into dry quarters, taking note of them, so that the seed-list may not be larger than really requisite. Some of the Cabbage tribe of seeds we occasionally have on hand for years, and find them as good as those fresh from the seed-shop. Most respectable seedsmen have all their seeds proved before they send them out to their customers; a pinch of each kind is sown thinly in pots and placed in heat, which soon causes it to vegetate, and by counting the seeds before sowing, and after they come up, the real value can be easily ascertained. The seed-list may now be made out. Though we generally give a chance to "novelties," we do not care about taking all for granted that advertisements state of their quality; nevertheless, we obtained some good things last season from those who advertise their "select" seeds; among these were "select" Redstone Turnips, Manchester Champion Celery, Veitch's Crystal White Celery, Abergeldie Kale. Among our best Potatoes for trial both in sheltered and exposed positions were, Veitch's Kidney, Milky White, Harold's Early, Dalmahoy, and Smith's Early. Stott's Champion Rhubarb is fine, and hardy. An extra large Onion we have seen exhibited by Stewart & Mein of Kelso, named "Santa Anna," will be found useful where size is wanted; Sang's Select Beet and Dewar's are as useful kinds as we have seen; though, for ornamental purposes, Osborn's selected, or Dell's (which appear to be the same), are extra fine in colour. The finest Lettuce we have seen this season was Imperial White Cos, which grew immensely large and crisp. A dwarf Savoy of Veitch's, named "Pancalier Joulin," has turned in useful this autumn; the heads are of a good size, very tender and early. We have tried several kinds of Cabbage which appear to be selections from good old-established kinds, such as M'Ewan's, Little Pixie, Enfield Market, Waite's King, and others: a useful kind of our own, named Suffolk Dwarf (which we have, for a number of years, given gratuitously to friends and acquaintances), has found great favour where a handsome small Cabbage, very early and of fine flavour, is desirable. Peas

which have stood the dry season well here were Sangster's No. 1, Dickson's Favourite, Laxton's Prolific, Champion of England, Veitch's Perfection, and Ne Plus Ultra. Among Cucumbers, Sheppard's Wonder is one of the best; we still hold to the Sion House varieties; a frame of Lord Kenyon and Highland Mary have been in full bearing from March till November, and were to the last in robust health. Some good old vegetables are worth giving a high price for, if they can be obtained true, which is a difficult matter after they are once fairly in the hands of the trade. All seeds, home saved, should be cleaned and placed in paper bags, and kept dry. All material that can be turned into compost should be collected when opportunity affords. Leaves of trees, edgings of walks, vegetable refuse from the garden, prunings (charred), and all similar material, may be thrown into a heap and made into useful dressing for vegetables, or for flower-borders and beds; besides, having it collected in an out-of-the-way corner keeps other parts of the garden and grounds orderly. Let Celery be protected with litter in severe weather, but let all be uncovered whenever thaw occurs. Granger's Autumn Broccoli, and Snow's, will require looking over frequently, and to be taken under cover to save them from frost; better to take the heads when they are small than lose them. Protect Rhubarb and Seakale crowns with litter or other material, especially if they are to be forced. To keep up a succession of these, a small quantity should be lifted every fortnight and introduced into heat, or cover the crowns with pots or boxes high enough to let the produce grow to a good size. Rhubarb requires double the height of covers that Seakale does. Let the material be well shaken up before covering over, and keep several sticks in it to test the heat, which should not be more than milk-warm, and even less would be better. Peas sown last month require to be looked after frequently, to see that no vermin are destroying the seed. Traps must be kept in use wherever the least trace of mice or rats is observed. A simple and useful old-fashioned trap is to place two sticks in the ground, and tie a string (with two or three peas, soaked in grease, in the centre) to each stick; let a brick rest on the centre of the string; and when the mice eat through the string, along with the peas, the brick falls upon them. The figure-4 traps are not so effectual as these. A flat stone for rats answers the same as bricks for mice. When Peas and Beans are through the ground, they may be protected with branches stuck among them. They may be staked early. Box may be relaid, which, though a simple operation, requires to be done neatly. The old box should be divided into small plants—the straggling tops and rough roots cut off; it is then ready to be replaced as an edging. Prepare the ground by breaking it up, picking out all stones; then thoroughly

tread and beat it down with the back of the spade, making it smooth and level, using a garden line, which may require to be pegged into its place. Cut out, by the side of the line, the soil deep enough to take in the roots of the box, leaving the tops an inch or a little more above the soil, not crowding the edging, but close enough to form a green line. Press the soil to the roots firmly, then replace the gravel, making the walk smooth and firm.

Fruit trees should now be all planted, and mulched to keep out frost. Let those requiring stakes be firmly secured. Place a piece of old cloth or leather between the bark and the string to prevent cutting. Let the stake come up as high as the "head" of the tree, fixing the stem firmly at the graft, wherever it may be. Let wall-trees be fastened by nails and shreds, or by tying the branches to the nails. We prefer the latter system, as the wall is not disfigured with cloth; there is less harbour for insects, and the use of nails is small in proportion. We prefer breaking the nails over (cast-iron ones are used) to pulling them out, as the wall is less injured, and fewer nests for vermin are made. When shreds are used, let the shoot be drawn closely into the main branch at base, gradually widening towards the point. Let each shred be reversed, pulling the shoot straight into its place, and leave abundant room for the wood to grow. Shreds or ties allowed to become tight often cause canker, and destroy the branch. The same rules apply to fastening with ties as with shreds; but when systematic training is attended to, the same nails for tying to can remain for many years, as each shoot is laid in the same space from which the other was cut, thus leaving no nails standing unoccupied. Strong tarred string should be used for the main branches, and soft tough matting for the bearing-wood. Trees, such as Pears with main branches, whether trained horizontally, fan-shaped, or upright, require only to have the branches tied securely to the walls. The spurs being stiff, they remain unmoved on each side of the branch, though by bad management they are often allowed to grow straight out. When young trees are trained properly at the beginning, their after-management is made simple, as well as having a neat appearance, and being fruitful in every part. If the young shoots are strong, and about seven in number, they may be brought into their proper place at first, taking one right and left about a foot or less from the ground—that is, if the trees are dwarfs. The next two should be started close from the others, becoming wider outwards, the next pair kept equidistant like the others, and the centre shoots cut back to throw out others to fill up the sides; no strong centre-shoot should be allowed to take the lead, but all the branches should be of equal thickness, length, and the same distance from each other. Then the bearing-shoots are allowed to grow

from the upper sides of the branches only, beginning short at the base, and each becoming longer towards the extremity of the main branch. Horizontal training is simply taking a main shoot up the centre, and taking side shoots from it, about the width of 2 bricks from each other. The centre shoot, when growing strong in summer, may have its top taken off, and the laterals taken right and left. Much time is thus saved, and often a more regular tree formed. Upright training (a system we prefer for Currants and Gooseberries when trained on fences, &c.) is training only two shoots horizontally at bottom, and taking leading shoots upright from them, keeping them equidistant. We are favourable towards this system for Peaches, Figs, and other trees trained to wire trellises under glass. Endless are the modes of training, which amount to the same thing in the end. The principal object in view is to keep a well-balanced tree loaded with fruit-buds on every part. Where space is limited for orchards and brakes of fruit-trees, it is an economical system to train over wires, forming an arcade. Apples do remarkably well in this way. The archway over a walk has a neat appearance in a kitchen-garden, and takes up no useful ground.

Roses should be planted without delay, if not already done. The ground should have been well prepared by manuring and trenching two spades deep. When planting, use a spadeful of kindly soil next the roots of each plant—thoroughly-decayed leaf-mould and fresh loam well mixed answer well; tread moderately firm, and place a mulching of half-decayed manure over the surface, to be forked slightly in after the Roses are pruned in spring. Branches stuck thickly among Roses afford good protection in severe weather, by preventing sudden and rapid thawing; broom is often used in preference to other shrubs; Laurel or Rhododendron prunings we find always answer well. Tender Roses may be taken up and placed by the heels in a sheltered position, and covered with straw or litter. All half-hardy shrubs—such as Myrtles, Aloysias, &c.—should have litter, fern, or other material laid over their roots and up their stems. All renovation in lawns may be done when weather will allow—turf lifted, the ground levelled, and all made smooth by rolling. Draining and all other rough work about grounds may be done as soon as possible. All plants in pits and frames should stand on a dry bottom, and no more water be given than is absolutely necessary; but no dribbling on surface of pots should be practised, as the plants would probably die soon from rotting at their collars, while their principal roots were suffering from the want of moisture. Cinerarias and Primulas, among soft plants, are liable to go off at their collars. Heaths, Epacris, and suchlike among hardwoods, are very liable to suffer from the same cause in winter. It is a good system, when potting, to use silver sand freely near the

surfaces of plants which suffer from damp. Slugs require looking after among potted plants; large snails may often be found, by the light of a candle at night, busy at their destructive work. All flowering-plants, of a hardy nature, which have been potted for forcing, should be kept from frost, and brought very gently into heat. A gentle bottom-heat and a cool moist top temperature encourage strong growth. This treatment suits Roses well, when they are forced for winter flowering. Roman Hyacinths will now be gay, and should have plenty of fresh air when weather will permit. Hyacinths and other bulbs under covering should be examined occasionally to see if any are ready to be taken to light. The roots appearing at the sides of the pots and the crowns sprung a little is a sign that they require light and air. Greenhouses, or similar structures where fire-heat is applied, require a little skill to manage them nicely, as much fire and sun at same time does great damage. To keep greenhouse plants at 40° in severe weather is high enough. M. T.



NEW PLANTS OF THE PAST MONTH.

WHEN Messrs Veitch & Sons some time since exhibited their new variegated *Abutilon Thompsoni*, it was asked, "Will it prove hardy? if so, it may be of good service as a bedding-plant." Well, it has proved to be capable of "good service as a bedding-plant," as in the open air the variegation comes out nice and distinct; and it has also proved hardy, as it bore, without any perceptible injury, some 8° or 9° of frost in October, when growing in the open air. Another capital ornamental-foliaged plant is *Ampelopsis Veitchii*, recently awarded a first-class certificate when exhibited by Messrs Veitch & Sons. It is a valuable addition to the hardy climbing-plants, as the leaves when fading, being compounded of red and yellow lines, look quite garish in the garb of these rich autumnal tints. In the way of hardy ornamental-foliaged plants must also be noticed the old *Aralia Sieboldi variegata* recently shown by Mr B. S. Williams in excellent condition, and awarded a first-class certificate. In 1861, when the merits, and especially the hardiness, of this plant were little known, it received a label of commendation—an award which the Floral Committee has recently superseded by the higher merit of a first-class certificate, in consideration of the increased usefulness of the plant. Mr Williams also exhibited *A. Sieboldi aurea variegata*, the edges of the leaves being marked with gold. It was not in good condition, though awarded a second-class certificate. Mr Williams thinks very highly of it, and is confident it will prove superior to the older form of variegation.

Messrs Veitch & Sons have recently exhibited a true form of the *Vanda insignis* of Blume, which received a first-class certificate. It is very distinct from what has hitherto been grown under that name, and very beautiful indeed. Mr B. S. Williams also exhibited *Cattleya maxima superba*, having a rich lip darker than is generally observed; and *Miltonia morelliana atropurpurea*, a very fine dark variety.

But little in the way of new Ferns has to be recorded. Mr Gray of Alphington, Exeter, has recently exhibited *Polystichum angulare* Grayi, a beautifully-grown, slightly-crested species, with fronds each bearing a pair of arm-like branches at the base, which was awarded a first-class certificate; and a similar award was made to Messrs Veitch & Sons for *Adiantum decorum*, a very distinct-looking kind belonging to the *tenerum* group. A second-class certificate was awarded to *Gymnogramma Laucheana*, var. *cristata*, a crested form of this well-known kind.

Begonia Weltoniensis, a hybrid variety raised by Major Trevor Clarke of Welton Park, Daventry, from a cross between an imported species by Weir, and *B. breviflora*, the last named being the seed parent, was exhibited from the gardens of the Royal Horticultural Society, and received a first-class certificate. It bears clear deep rosy-pink flowers with yellow stamens, and was stated to have been in bloom since April. It was exhibited in February 1864 as *B. ornata*, and received a second-class certificate; but being in much better condition when again produced, it was considered fully deserving of the higher award it has received. It will prove a valuable plant for house decoration, as it is both profuse and continuous in blooming, as well as being exceedingly effective.

A fine specimen of *Zygopetalum Gautieri*, one of the maxillare group, exhibited by Mr R. Parker, Tooting, received a first-class certificate. It has deep brown barred sepals and petals and a large violet lip, shading off to white towards the edge. *Anætochilus Dawsonianus*, from Mr W. Bull, a beautiful kind with deep-green leaves, charmingly varied with bright orange-red, was awarded a first-class certificate; and the same award was made to *Calamus Lusianus*, a handsome and effective kind, the young fronds bright buff and brown, also from Mr Bull.

Three varieties of the second batch of new *Coleus*, raised by the Royal Horticultural Society, have received first-class certificates—viz., Queen Victoria, crimson-chocolate leaf-ground, tinged with purple, and leaf-edge of gold—a beautiful variety, that will make a splendid specimen plant; Prince of Wales, crimson leaf-ground, dashed and lit up with bright claret and narrow edge of gold; and Princess-Royal, ruby-bronze leaf-ground, lit up with purple and slightly edged with

yellow. Mr Bull has produced three varieties of the older character—Victor, Refulgens, and Masterpiece—all mere repetitions of, or with only slight variations from, what has gone before them. The new strain of the Royal Horticultural Society are most decidedly distinct and novel.

Mr Sherratt, gardener to James Bateman, Esq., Knypersly Hall, Cheshire, has recently exhibited a plant of *Pleione lagenaria*, having about sixty beautifully marked blossoms. It was most deservedly awarded a first-class certificate.

In the way of new florists' flowers but little has to be noticed. *Dahlia* Commander, from Mr W. Bragg of Slough, received a second-class certificate—a flower with a bright golden-buff ground, the backs of the petals rosy salmon. Mr George Rawlings, Romford, received a first-class certificate for Emperor, a flower of much novelty of character, the colour bright claret, shaded with crimson and tinted with purple, a promising flower of good outline and close high centre. A very handsome silver-edged variegated Zonal Pelargonium, named Mrs Colonel Wilkinson, has received a first-class certificate. It was shown by Mr Coomber, gardener to Colonel Wilkinson, Highgate, and has a high-coloured vivid red zone and excellent habit.

An assumed white variety of *Lobelia erinus speciosa* has just been shown, but in such a condition that a correct judgment could not be formed respecting it. Some of the white flowers were tinged with blue, while all the old growth of the plant had been cut away, and the new growth looked as if it had been developed under glass to take the blue tinge from the flowers. I am by no means disposed to assert that this is a general practice, but things are frequently "coddled" to appear at their best when produced for certificates, and the character is invariably unreliable in consequence.

R. D.

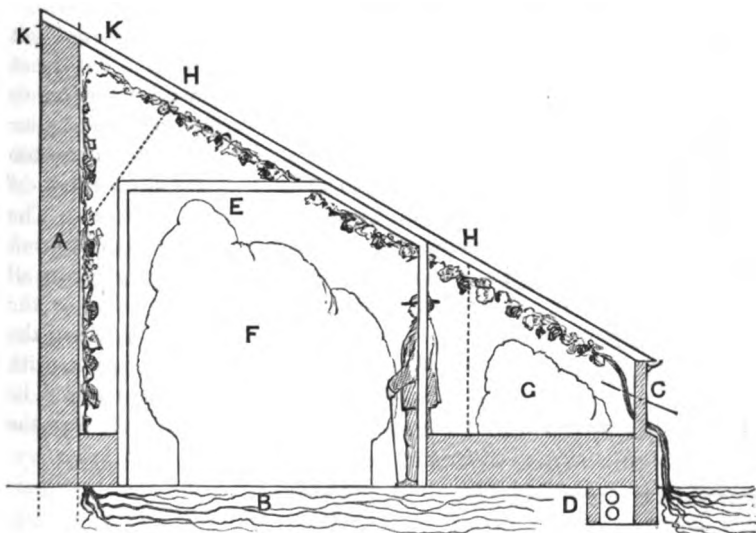


THE NEW ORCHARD-HOUSE "RAILWAY."

THE only objection which has hitherto been made, even by the highest authorities, to this method of growing fruit, is the expense; but when the question is put fairly, it can be proved, on the contrary, that it is by far the cheapest method of growing fine fruit that has yet been brought before the public—*e.g.*, a man has gone to the expense of building an orchard-house, say of 60 feet in length; he can for forty guineas (which is the entire cost of applying the railroad and whole apparatus) fill such a house with trucks for his trees, have all the advantage which the valuable protection of the house affords, and at the same time, from the assistance of the railway and trucks, derive the

full benefit of the open air, and consequently grow his fruit of the very highest excellence (it is well worth the money for this alone) ; but he can, in addition, grow a house full of first-rate Grapes. The question, therefore, really is, that, unless he can build a vinery 60 feet long for less than forty guineas, he must be a gainer, for it is impossible upon the old principle to grow the two fruits together to be worth eating at all. But the reverse position to this is of much greater value. Sup-

FIG. 1.—SECTION OF A HOUSE IN WHICH GRAPES AND ORCHARD-HOUSE FRUIT ON TREES IN POTS MAY BE GROWN TOGETHER IN THE GREATEST PERFECTION.



A. Back wall, height inside, 14 feet.

B. Width inside of whole house, 17½ feet.

C. Ventilating lights and 18-inch wall, from ground to eaves, 4 feet.

D. Hot-water pipes, sunk.

E. Folding-doors, opening square, ex corner, 9 feet.

F. Space traversed by trees on trucks.

G. Trees, plants, or Strawberries.

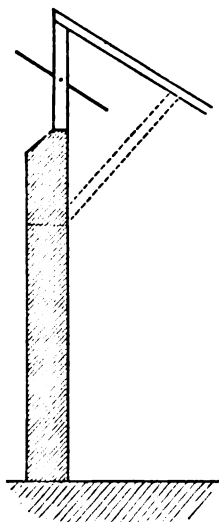
HH. Pillars of hollow iron, 2 inches diameter, at intervals, to support two T irons running beneath and supporting rafters through the whole length of the house. N.B.—The pillars fixed in the ground cannot be nearer the centre of the house because of the paths.

KK. Plenty of ventilation all along, either in back wall or top of glass.

pose a man builds such a vinery, as is described above, 60 feet in length, fitted with every appliance for growing Grapes in perfection, by planting the Vines 7 or 8 feet apart up the rafters, trained on the close-spur system, he obtains all the light the fruit-trees can at any time require ; and the house being, moreover, quite free in sunny weather, the whole back wall will grow a fine crop of Black Hamburg Grapes. The trees, shunted out in front of a south wall, or having the advantage of the house in inclement weather, will grow him such fruit as he could never get in any house where they were a fixture ; besides, if they remain in

the house to await a final removal into the garden by hand when the

FIG. 2.

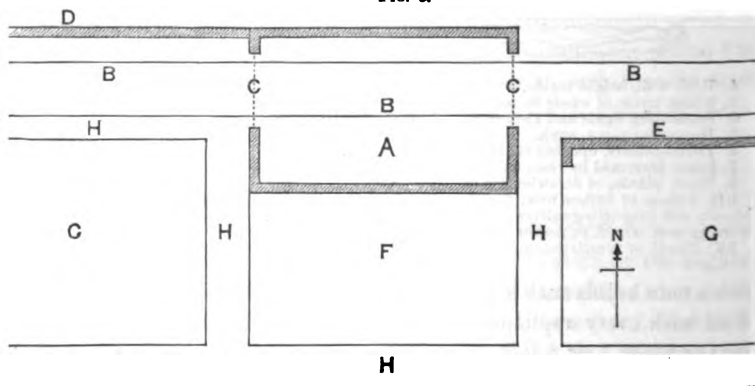


To show how house may be made if wall only 11 feet high, or how with span-roof if only 8 feet high.

summer is advanced, what becomes of the Grapes in the mean time under the influence of the thorough draught so absolutely necessary to grow the other fruit at all? Under these circumstances, which are not overstated in any one particular, but the contrary, who can say that he does not by the remove-at-will plan have his 60-feet orchard-house for forty guineas, and his fruit in a position to attain the highest possible flavour? and all I can say is, if he does not get it, it is by his own mismanagement. I will not enter upon the facilities offered for forcing or retarding, as that would occupy so much of your space, which I have already trespassed upon too much—added to which, they will at once suggest themselves to any intelligent gardener. The trees are plunged in large pans, for them to root in through the bottom of the pots, these pans all revolving on their axes, to turn any side to the sun at will, or for pruning without disturbing the roots. This has been very useful this season with Apricots. The trucks can, whenever required, be

moved with ease by a strong boy in and out of the house through the

FIG. 3.



- A. House.
- BBB. Rails.
- CC. Folding-doors.
- D. South wall, along which trees are shunted for usual growth.
- E. North wall, behind which trees are shunted for retarding Peaches, &c., till November, which may be finished off in the house with heat.
- F. Vine-border.
- GG. Other Borders.
- HHHH. Paths.

large folding-doors. My fruit was such this season as I have never seen or tasted from any orchard-house ; and there is still a fine crop of Grapes hanging from the Vines quite black and perfectly ripe without fire-heat, though I have (and prefer) hot-water pipes attached to the house when I like to use them. J. F.

SOUTHACRE RECTORY, BRANDON, NORFOLK.



NOTES DURING A ROUNDABOUT TOUR.

(Continued from page 422.)

FROM Banbury I went to Yeovil, having an engagement to judge at Sherborne the next day. A short run over the South-Western Railway brought me to Sherborne, famous for its fine old parish church, the interior of which is well worth a visit. A flower-show at Sherborne is a serious matter—serious in this sense, that the inhabitants “go in” for “a day out” on such an occasion, and make it a kind of general holiday. They get thoroughly earnest, do these Sherborne people, about a flower-show. Triumphal arches formed one aspect of the streets, flags in great numbers another. Thoroughly cosmopolitan were these good Dorset folks also, in so far as it was expressed by their flags, for they seemed to include the ensigns of “all nations, and kindreds, and peoples, and tongues.” It was very pleasant to walk through the clean narrow streets of this country town, and note all this bustle and excitement and anticipation of pleasure that appeared to beam on the face of every one to be met with. Even the very flagstones of the street pathways were lifted at intervals, and Spruce Firs, some 6 feet in height, placed in the openings ; looking for all the world as if a county Christmas-festival was about to be held in the public streets of Sherborne during the summer. At the upper end of the town stand the ruins of old Sherborne Castle, now devastated by age, but of great interest for the visitors to the town. Within a circle formed by the remaining walls of the old castle was held a most interesting provincial show—many features of it being much above the average provincial exhibitions. The fruit and cottagers’ productions struck me as being of a high order ; and Mr Thomas Osborn of Fulham, who was here as one of the judges with Mr Shirley Hibberd and myself, had brought down with him a bunch of Mr Thomson’s Golden Champion Grape, which was tasted by the leading gardeners of the district, and universally commended as being every way first-rate in character. Luscious, melting, and richly-flavoured beyond degree were the berries of

this splendid Grape—lumps of rich ambrosia, worthy a place in the banquets of the immortal gods.

Close by is the new castle of Sherborne, the residence of George W. Digby, Esq., a man of princely wealth, and a generous patron of horticulture. In the midst of a splendid demesne, richly endowed with some magnificent woodland, stands the castle, built in a style that may be regarded as a combination of the Tudor and the Elizabethan, and occupying a commanding eminence. There is one peculiarity about the grounds of Sherborne Castle, that there is not a particle of a flower-garden to be seen. Between the old and the new castles is a large piece of ornamental water; and looking over this from the castle, the eye rests on a large sloping bank containing some grand clumps of Yews, some fine Cedars of Lebanon, &c., and beneath and about there are winding walks, large beds of Evergreen shrubs, and broad ribbons of Ivies. A more delightful place to sojourn in on a hot summer's day can scarcely be conceived.

After the work of judging had been got through, and a wretched luncheon partaken of, Mr W. G. Pragnell, the gardener at Sherborne Castle, piloted a large party through the kitchen-garden. It is, without exception, one of the most neat and cleanly kept I ever saw, while the state of the various departments was highly creditable to Mr Pragnell. At the termination of the visit, the health of Mr Pragnell was proposed by Mr Shirley Hibberd, over some tankards of foaming ale, in some well-turned and happy remarks, and was feelingly responded to by Mr Pragnell; after which the party divided, one moiety returning to the park to inspect some splendid purple Beeches, for which the place is famous, the other remaining to take a cheering cup of tea with Mr Pragnell and his worthy parents; his father having previously filled the position of gardener at the castle. Should any of the readers of the 'Gardener' find themselves in the neighbourhood of Sherborne during the summer months, they will be abundantly repaid by a visit to the grounds of the castle.

Here it was my good fortune to make the acquaintance of a very worthy member of the horticultural brotherhood, Mr Thomas Sampson, Houndstone, Yeovil; and I was pressed by him, with true Somerset generosity, to partake of his hospitality for the night at Houndstone. I could not refuse an invitation so spontaneously offered, and never do I willingly miss the chance of making a new horticultural acquaintance. Mr Sampson is a large grower of agricultural seeds, as well as a farmer; and to these branches he has recently added those of nurseryman—having an excellent nursery in the Preston Road, Yeovil, and not far from his residence at Houndstone, at which bedding and soft-wooded stuff is so extensively grown as to merit being termed one of the largest establish-

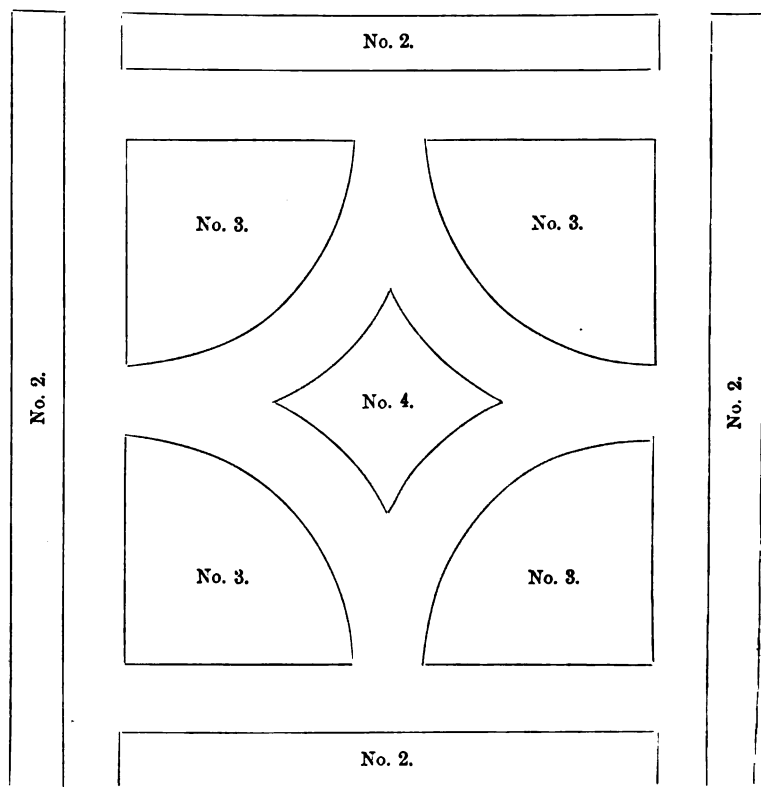
ments in this way in the south-west of England. There is one house in this nursery quite worthy of notice, and it is used in the early spring time to accommodate the young-struck bedding-stuff. The house is 66 feet square, and is divided into aisles by eight alleys; between these alleys is a raised platform, bricked up at the sides to the height of $4\frac{1}{2}$ feet, and on these platforms, and on shelves, above and around, is the young stuff arranged by thousands. Nearly at the top of each platform, and attached to the brick sidings, is a 4-inch hot-water pipe, and on this series of pipes are placed, during the spring months, the young Variegated Pelargoniums, the bottom-heat so obtained greatly assisting their development. Along these platforms are planted Vines of divers kinds, which have grown up and been trained in every direction under the glass; and Mr Sampson informed me that he can cut 25 cwt. of Grapes annually from this house. There is now a great deal of glass about the nursery, and a large and healthy stock growing. The nursery-grounds are excellently situated and tastefully laid out, and ornamented with fine specimen Coniferae, hardy pictorial trees, &c. Some of the largest specimens (there were four of them) of *Epiphyllum truncatum* I ever saw are contained in one of the houses. They have wonderful heads, and every year are covered with myriads of prettily-tinted blooms—grander objects for conservatory decoration could scarcely be imagined; and I understood from Mr Sampson that he had offered to present the trees to H. R. H. the Prince of Wales for the new conservatory at Sandringham.

At Mr Sampson's residence at Houndstone I saw a *bijou* flower-garden that was particularly attractive on the occasion of my visit. A good breadth of grass plat occupies the front of the dwelling house—not disfigured by a number of flower beds irregularly placed about and slovenly planted, as in the case of some gardens, but kept closely shaven and held sacred to croquet and other means of recreation. Along the verge of the carriage-drive, running parallel with it, was a series of small circular beds planted mainly with golden-leaved and gold and bronze Zonale Pelargoniums, edged with a capital variety of *Lobelia erinus speciosa*, named *Drummondii grandiflora*, sent out by Mr Sampson. This has proved an admirable selection and a valuable bedding-plant. The flowers are of a bright shade of indigo blue, and the style of growth nice and compact. Some capital standard Bays and Laurestinuses in tubs also lined the roadway like rows of leafy sentinels keeping guard over the pretty gardens near. Just a glimpse only of this flower-garden is obtained as the visitor enters at the gates from the public road. On crossing the lawn a small raised garden bursts into view, a brilliant mass of colour, harmonised and toned by the addition of foliaged plants. It was sheltered on the east and on the west by a

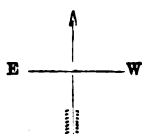
LEAN-TO CONSERVATORY.

No. 1.

GRAVEL WALK.



SLOPING BANK OF TURF.



shrubby border, and was open fully to the south, a lean-to conservatory forming a back-ground. I thought this garden so pretty, and so nicely arranged, with perhaps the single exception that the presence of a little more white foliage would have improved it, that I obtained from Mr Sampson a plan of it, thinking that, perhaps, you could find space for a representation of it. To those who may contemplate laying out a small garden it may prove of great value, as suggesting, at least, an arrangement that could be modified in some of its details. The arrangement of the plants in this instance was as follows:—No. 1. a ribbon border of five rows in front of the conservatory; back row *Stella Nosegay Pelargonium*; next *Christine Pelargonium*; next *Iresine Herbstii* and *Amaranthus melancholicus ruber* alternately; next *Calceolaria aurea floribunda*; and a front row as an edging of *Lobelia Drummondii grandiflora*, blue. The four oblong beds marked No. 2 were planted similarly—viz., a line of *Christine Pelargonium* down the centre of each; on either side *Iresine Herbstii*; and edged on either side also with *Mrs Pollock* variegated Zonal, that had done remarkably well and was singularly attractive. The four beds in the shape of the segment of a circle marked No. 3 were also similarly planted, and so as to face each way—viz., a circle of *Tom Thumb Pelargonium* in the centre, surrounded by *Calceolaria aurea floribunda*; then *Purple King Verbena*; the whole edged with *Alma* variegated *Pelargonium*. The diamond-shaped bed in the centre—No. 4.—was planted in the centre in the form of the bed with *Coleus Verschaffeltii*, edged with *Golden Chain* variegated *Pelargonium*, much brighter-looking and attractive than is generally seen. Such was the disposition of this garden—a pleasant spot in a bright summer's morning, with the ascending sun shining through the rain-drops deposited on the varicoloured leaves by the morning's shower, as if they were hung with silver beads, by way of decorating some of the beautiful forms the bountiful heart of nature has yielded forth to delight the eyes and gladden the hearts of the sons of men.

R. D.

(To be continued.)

NOTES ON GREENHOUSE PLANTS.

(Continued from p. 491.)

ADENANDRA FRAGRANS.

THIS is a sweet little evergreen greenhouse shrub, with simple lanceolate leaves arranged alternately along the stems, which latter are slender and pliable. The flowers are produced in trusses on the

summits of the shoots, and have a rich solid texture ; colour, faint rosy white, with a tapering streak of bright purple extending half-way up the centre of each petal. They resemble those of *Phlox Drummondii* in appearance, but the latter wants the fragrance of the other.

Propagation.—The genus can be multiplied pretty freely from the points of the young shoots before they are fully ripe ; but see that full growth has been attained, otherwise they are likely to damp off. The method of preparing and striking the cuttings is quite analogous to that practised in the case of Heaths and other hard-wooded plants. A light, porous, sandy, peaty soil, pressed rather firmly in the pots, suits them ; steady but gentle bottom-heat, covering them with a bell-glass, airing, preserving from damp, and keeping the glass scrupulously clean, and free from superfluous moisture. In other cultural details *A. fragrans* may also be assimilated to the heaths ; but a portion of rich porous loam may be added to the soil with good effects. *A. speciosa* and *A. uniflora* are both nice species, with white flowers.

TETRATHECA ERICOIDES.

A charming little heath-like greenhouse shrub, of easy culture, is evergreen, and peculiar in its aspect from the dusty brownish cast of its leaves, which are narrow, simple, and lie in a close imbricated manner along the stems. The leaflets have the strange characteristic of folding their margins inwards lengthwise, the folds meeting in the middle, and giving the leaf the appearance of two small cords united. The flowers are minute, starlike, of a rosy lilac hue, and are produced from the base of the foliage near the apex of the shoots. It blooms in the autumn and winter months when most other plants are flowerless, which makes it more valuable. Propagate and cultivate as recommended for *Adenandras*. *T. Flugeli* has large lilac flowers, and *T. verticillata* large violet flowers, blooming almost continuously when kept in a healthy growing state.

ESCALLONIA MACRANTHA.

Another Evergreen of great merit, suitable either to train against a wall out of doors where a warm dry situation can be assigned it, or trained on wall or rafter in the conservatory, as well as making a splendid specimen in a pot. It can be made to yield a profusion of flowers at two periods of the year. This is attained by pinching back a portion of its growths prior to its growth being completed, and allowing the remainder to get properly ripe and produce their blooms. By this means the pinched growths will reproduce young wood while the others are flowering, and they will in their turn provide their

flowers. Those growths that are pinched will flower in autumn, while those permitted to mature their wood will flower in June and July under glass. *A. Macrantha* produces its flowers in pendent corymbs from the points of the ripe growths. They are *Pentstemon*-like, but are more graceful and perfect in make than that flower. Colour, brisk lively rose, throat white, glistening, veined, and delicately tinted with rose. The leaves are simple, oval, placed opposite, of a dark shining green, and firm texture.

Propagation.—Whenever half-ripened wood can be obtained, and a gentle bottom-heat afforded, this can be accomplished in a few weeks, preferring a soil of equal proportions of sharp sand and well-reduced leaf-mould. The rooting process managed, the young plants may then have pots for their own accommodation.

General Culture.—Prepare a compost of fresh loam, leaf-mould, sharp river-sand, and well-decomposed cow-manure; let it be properly broken, but not riddled; then pot the plants in pots 3 inches diameter, placing a portion of the finer parts of the soil about the roots, and allowing at least an inch of broken pots as drainage. Water the soil thoroughly, and remove the plants to an airy house near the glass, and cover with a temporary shade in sunshine until the roots take hold of the soil. Keep them rather moist at the root, and pinch out the crown when the points are 3 or 4 inches above the soil. Fresh shoots from the sides will soon be forthcoming, and those on one half of the plants may be allowed to grow on unpinched, to supply the first set of bloom, while the other half should be continuously pinched back (for the first year) at the fourth joint, as successive growths are provided. This will lay a good foundation for permanent specimens. Continue to supply larger-sized pots as soon as those they occupy are filled with roots, and encourage steady and healthy growth by giving them an airy situation near the glass, watering abundantly while the plants are in vigorous growth, and attending to staking as fresh wood is furnished. Turn out the plants at the latter end of May among the other greenhouse plants, where they may remain until October; but never relax your attention as regards watering, keeping free of weeds, pinching, tying, and trimming, as the occasion may demand. Pinching should be discontinued in spring, when wanted to flower in autumn; and likewise in July for early summer. Water should, in a great degree, be withheld at that short period of apparent rest that occurs between the wood-finishing and the flower-forming, as it has the tendency to start fresh wood-growth, thereby having a detrimental effect on the flowers. Lastly, to guard against mildew in winter, to which they are much subject, let a dry airy stance be allotted them, and refrain from supplying too much water at the root; or rather, let them have it

copiously when really necessary, but the seldomer the better. This system may be adhered to while the plant is in a dormant state ; but as soon as growth is indicated, more water ought to be supplied.

A. KERR.

(To be continued.)

P O T A T O E S.

It is seldom that an opportunity offers to inspect a collection of Potatoes, while any information respecting them is always acceptable. It is not too much to say that the Potato is, to some extent, under a cloud. Perhaps this is because it is so common, and yet reliable information respecting the qualities of the newer kinds of Potatoes is as valuable and as acceptable as that related to the newer kinds of plants. Among vegetables the Potato is a thorough democrat ; it is all root, or but little else ; and it is so universal an article of food that it is the common heritage of all. At a meeting of the Fruit and Vegetable Committee of the Royal Horticultural Society on the 20th of October, a collection of Potatoes was staged by Mr Robert Fenn, The Rectory, Woodstock, Oxon, a gentleman who makes the culture of the Potato a specialty, and cultivates it well and successfully, and has, moreover, raised some very good new kinds. Of the sorts shown by Mr Fenn, the following were stated to be frame kinds :—

Almond's First Early Kidney, a variety scarcely distinguishable from the old Walnut-leaved Kidney. The old Early Ashleaf Kidney, stated by Mr Fenn to be "not second to any early sort as regards flavour." Premier, a new seedling Kidney Potato, and considered to be a great acquisition—without doubt the best of the early sorts as regards bulk of crop ; a first-class early tuber, arriving at its greatest perfection on a light soil, very handsome shape, medium foliage. Shutford seedling, having the lapstone shape, a first early kind, producing short glazed foliage, suitable for forcing or keeping ; flavour excellent. The old Walnut-leaved Kidney, early and acceptable. Hogg's Coldstream, a first early round variety, and specially suitable as an only kind for small gardens ; and Sutton's Racehorse Kidney, respecting which Mr Fenn states that there is no difference between this and what is known as the old Mitchell's Early Albion Kidney.

As representing sorts for a general crop, the following were staged : Rintoul's Early Don, a round white variety with purple stains round the eyes ; an excellent Potato, the haulm very brittle. Haigh's

Kidney, a mottled purple-and-white tuber, a second early and good old sort, from which it is said the Lapstone Kidney originated. Birmingham Prizetaker, an early oblong white clear-skinned variety. Fenn's Onwards, a handsome round variety, raised by Mr Fenn from a cross between Jackson's Kidney and the Fluke Kidney, considered by Mr Fenn to be one of the best white round Potatoes in cultivation, a good cropper and keeper, fine flavour, healthy dark foliage of medium growth. Some tubers of this variety were cooked, that the Fruit Committee might taste its flavour, but it was not considered by them to be of extra quality. A dish of this sort was also furnished by Mr Fenn for the monthly dinner of the Horticultural Club the same evening, the tubers being rather smaller than those boiled for the Committee; and it was unanimously agreed that the qualities of the Potato were first-rate, and Mr Fenn was complimented for having raised so good a kind. That the mode of cooking a Potato has much to do with its flavour, is a fact placed beyond doubt; and probably the test furnished at the meeting of the Horticultural Club had the advantage of better cooking than the tubers supplied to the Fruit Committee. Dean's Improved Ashleaf Kidney, a second early variety, was highly spoken of by Mr Fenn; as well as Dean's Waterloo Kidney, also a second early, and a very excellent sort for garden purposes. Other sorts were Rivers's Royal Ashleaf, an early second early, an excellent tuber to "die from the soil," as it is termed, during the summer—yellowish flesh, of good flavour, and a bountiful cropper; Fransell's Seedling, an excellent second early round white Potato for garden cultivation, one of the best for the purpose; Royal Albert, a good second early oval-shaped white variety; Taylor's Yorkshire Hybrid White Kidney, acknowledged to be derived from the grafting the old Early Ashleaf Kidney with the Runcorn Short Top, an eye of the Ashleaf Kidney forming the scion—flavour excellent; Sussex Kidney, a large white second early; Wheeler's Milky White, a very good late Potato, with a fine white flesh, well suited for table—a good cropper, and dwarf foliage; Daintree's New Seedling, an improved Lapstone Kidney, a dwarf grower, and an excellent sort to follow a first early; Almond's Yorkshire Hero, an excellent late-keeping Potato, and a new strain of the Lapstone class, having qualities of a very high order, awarded a first-class certificate by the Fruit Committee from tasting cooked tubers; Paterson's Scotch Blue, a blue round second early variety, good for garden purposes; and Emperor Napoleon, a very fine red round Potato of excellent quality, but should be grown in light soil.

For field culture, two sorts were recommended by Mr Fenn—viz., Dawes's Matchless, or Webb's Imperial Kidney, a large and coarse late

Kidney variety ; and Paterson's Victoria, an excellent kind, good also for garden culture, but should be grown in a rich soil.

It should be stated that Mr Fenn cultivates all his Potatoes on the ridge and furrow system, as he has great faith in this mode of culture. He is also engaged in proving some fine Seedling kinds of his own raising, and has great hope of obtaining from them some sorts manifesting great improvement in the kinds now generally grown.

Quo.



ON CLIMATE.

THE study of climate is of vast importance to every gardener : the immense variety and daily increasing subjects that are put under our care from every quarter of the globe necessitate an acquaintance with every known climate, if we are to cultivate successfully the plants which are intended to adorn our hothouses or beautify the British landscape. We find that many plants will *live* in the extreme opposite of what they have been found in when discovered in their native habitat ; but this is not satisfactory, and only shows what Dr Johnson very pithily said to a lady who demanded the Doctor's admiration of some scraps that barely merited the name of plants. The great philosopher would not admire ; the lady persisted, "it just showed one could have such"—"Why, madam, it just shows you cannot have such !" We now require to see a plant or tree *in effect*, and unless we study the natural climate of the plant or tree, the success will be too limited to merit admiration ; and in the cultivation of ornamental plants nothing less than superior effect will gain admiration at this energetic time of gardening.

The following remarks will chiefly bear on the climate of Ireland, about which much misapprehension exists in England and Scotland, where many speak of the climate of Ireland as unfit to ripen corn, that we live in a sort of hazy mist, and that generally a *boggy muggy* climate prevails. The late R. Errington of Oulton Park wrote that the Beans grew to the height of about 11 feet (!) in county Fermanagh. Dr Moore of Glasnevin laid a valuable report of the climate and flora of Ireland before the International Horticultural Exhibition and Botanical Congress of London, 1866. Dr Moore has kindly sent to me a printed copy with interesting chart, from which I will take leave to make extracts of information carefully drawn up, and bearing on horticulture in this climate.

I may here express a wish that Dr Moore would go on with observations on the climate of Ireland—the subject could not be in better

hands ; an enlarged "Report" on the plan of the paper referred to would be a valuable guide as to the capabilities of horticulture and agriculture in this island climate.

The climate of Ireland is considered truly exceptional, compared to England and Scotland and other parts of Europe under the same isothermal line. The *mean* temperature of Ireland is often referred to as indicative of its climate for fruit-growing and grain crops. It is now well known that a *mean* temperature over the year is *no guide* in estimating the condition of climate for ripening grain or fruit crops ; neither is the rain-gauge an index of the humidity of the atmosphere ; nor has any system of observations that we know of been adopted to tell the amount of the sun's direct light and heat intercepted by aqueous vapour. The disposition of fogs is a great point to be considered in a climate where fruits are expected to ripen to full maturity ; but we shall have more to say on this point.

An *island climate* must always have its peculiarities, and be very different from that of a continent ; it would be a grand step in practical knowledge if we can determine, by a system of correct observations over a district, what fruits and grain crops will come up to a standard quality in open-air climates. There have been some attempts to name certain fruit-trees suitable to certain districts, but this has never been done by the *authority* of systematic observations ; hence no progress has been made in this country in the way indicated, and we find the most futile attempts to grow fruits that never are fit for use.

A more correct study of climate would certainly prevent fruit and vegetable gardens being placed in such unfavourable positions as they are often found in ; it is notorious that many fruit-gardens in this country have been placed out of the way, without the best recognisance of sun, air, or moisture.

It is observed by Dr Hooker and other travellers that altitude, within ordinary limits, gives no correct data on which to calculate the range of successful culture. The conformation of the ground and the disposition of mountains greatly influence climate. This is not more remarkable in the vegetation of the great Himalayan ranges, or the Dofrines of Lapland, than it is at the remarkable lakes of Killarney, with their almost tropical vegetation. We cannot overlook the position of Lombardy, and how its fertility may be influenced with the towering Alps to the north and the Apennines to the south.

If we examine the old authorities on arboreal limits, or where cultivation of grain crops must end, there are limits given without other considerations. It is worth observing that on the coast of Norway the Spruce and Hazel terminate at the same point, while in Sweden, on the Baltic coast, the Spruce grows 8° nearer to the pole than the

Hazel ; in Siberia the Spruce, Fir, and Larch are found farther north than the Scotch Fir or the Birch.

Norway and Lapland have a more temperate climate than any other country in the same latitude. Scotch Fir 60 feet high is found in the lat. of 70° , at the head of the Gulf of Bothnia ; in 66° of lat. the timber is spoken of as of good size, but there the Atlantic and Arctic Ocean, the White Sea, and the Gulf of Bothnia must have great influence. In favourable aspects in Norway, grain ripens in the lat. of 70° , in Russia scarcely at 60° , and in Kamtschatka, extreme east of Asia, only at 51° does corn ripen ; in the east of America it does not go beyond the 52° of London.

These are only a few items to show how much more must be taken into consideration than latitudes in usefully studying climate.

CHAR. M'DONALD.

(To be continued.)



GARDENERS, NATURAL AND SCIENTIFIC.

IN penning the following desultory remarks, I do not wish to be misunderstood by any one who reads the 'Gardener;' and if I should commit myself by allowing my thoughts to flow too freely from my "writing-iron," it will not be with the direct intention of entering into any argument on the subject ; nevertheless, the subject is one of considerable interest, and the more it is investigated the better. The two characteristic sketches so accurately drawn by "W." are extremes, and what we want is the medium. A man may make a very good cultivator, and may grow Orchids with success ; even *Anætochili* may flourish luxuriantly under his management, even though he is not able to write his own name or spell a word out of a book ; but the character represented by "Sandy" is not the style suitable for a nobleman's or gentleman's establishment of the present day. Fifty or sixty years ago such a man might have got on tolerably well in such a situation, but at the present period practice and theory must go hand in hand, when the one will be found to assist the other in a remarkable degree. A gardener of the present time must have a certain amount of theoretical talent, as well as a goodly store of practical ability, if he wishes to excel in his profession. We must not look to such men as "Sandy" represents in order to obtain our future Paxtons, Lindleys, &c.: rather must we look to those in whom theory and practice are happily blended, so as to form a perfect whole.

The natural aptitude of some for gardening (as for all other professions) is more than that of others, and it must be owned that this

goes a long way; and we have every reason to expect that such men, if polished up by sound scientific teaching, will invariably make the best gardeners.

As "W." says, men like "Sandy" will never exert any influence beyond their own immediate sphere; and he is quite right in his assertion. Such men are extremely useful in particular cases, but they will leave but few "footprints on the sands of time" to guide others onwards.

In every large garden will be found some young gardeners who are inclined to be studious, while the remaining portion, who have not the inclination or ability (often the latter), content themselves with what they are pleased to call the true practical side of the question.

In many a large bothy the case of "Tom v. Sandy" has been discussed with much ardour and warmth of opinion before this, and as the sketch drawn by "W." is in favour of the *practical* party, it will be used pretty freely in support of their opinions; and I presume the studious portion will have but a poor time of it in consequence. We may have too much of a good thing, and even theory may be overrated by some, as "W." has represented; but when studied in conjunction with practical operations, it cannot but be beneficial. Theory may be said to resemble a microscope that enables us to see clearly what with the naked eye is dim and undefined.

And now a word about taking notes. It is a thing extremely common for young gardeners to do, and it is a thing that is but rarely well done. A pocket-book full of mere names can be of but little value to any one. A note may be considered as the link that connects our powers of remembrance with the object to be remembered; and notes must do this before they can be of much service to us. Many young gardeners, on going to visit a nursery or flower-show, write down nothing more than a mere list of names, not half of which they could remember a week. Now, this sort of thing is next to useless. A short concise description, being particular to note any marked peculiarity, will assist the memory wonderfully. It is next to impossible to study for examinations without taking notes, and that pretty freely too; and to all young gardeners I would say, make notes of everything you do; although it may appear very insignificant at the time, if preserved it may prove extremely useful to you. This I have found to be the case in my short experience. If any new idea strike you, do not neglect to note it down in your pocket-book. The book should be of a convenient size for the pocket, and should be paged. Only write on one side of the paper, and leave sufficient space at the end of the book to form an index of all contained in it. Then, upon entering a note, put down the subject on which it treats

in the index, and the number of the page. This makes it much easier for reference. If possible, have a book for each separate subject in which you study. Above all, get into a systematic way of making your notes—reduce everything, in fact, however simple, to a definite system; for instance, if notes are entered into the book anyhow, without order and regularity, it will be next to impossible to discover notes on any particular subject without turning over nearly every page; whereas, if you have a systematic index, you have merely to look over it to find notes on any particular subject which may claim your attention at the time.

It cannot be denied that a little more time is occupied in the first instance, but the time eventually gained by having everything arranged on one definite system more than repays for this seeming loss.

F. W. B.

[We cordially concur with the author of this paper.—ED.]



THE SUMMER OF 1868.

ONE of the fairest seasons (as regards weather) in the memory of the present generation is passing away. The year, having given us a genial spring, a glorious summer, is now, like a lovely woman, in the autumnal stage of her beauty. One by one the graces of her youth have fallen from her; but time has touched her charms with a tender hand, and has left her much we love to look upon. A few more lovely days, then the fogs of autumn, the frosts, white and black, of winter, and this year, with its events, changes, joys, and sorrows, will have

“ Fallen into the dusty crypt
Of darkened forms and faces.”

Before this happens, let me, in these late days of October (begging my readers to remember that I write from a midland county, and know nothing of the climate of the south and west of England) recall the summer that has been.

The preceding winter was an unusually mild one. We had a little severe weather in the beginning of the year—snow and frosts, which lasted a week or two; then, for the most part, fine, mild, open days—glorious hunting weather! What can be pleasanter than the ride to cover in the dewy morning? A little frost just freshens the air, but melts away and disappears in the sunlight before you reach the cover-side; then kindly greetings from friends on your arrival, hounds baying impatiently, horses pawing the ground. The field is a small one yet, but stray horsemen from distant country-houses and villages drop in.

Hark, the horn!—we are off. The scent is good; we shall have a glorious day. Hunting in this midland county is not very severe work; it suits riders like myself, who have outlived the age when it seemed necessary to one's reputation to pick out the biggest fences to jump and the awkwardest places to scramble through. Now I prefer the gate.

But where am I? Drifting from my subject—led away by a false scent. Was I not writing about the weather? and have I not, mounted on my favourite hobby, strayed into the hunting-field?

The explanation of this aberration is, that the lovely weather of last winter will always live in my memory, associated with days with the R— hounds.

Spring (although, on the whole, a genial one, and little troubled with those dreadful east winds which, like frowns on the face of beauty, disfigure the youth of the year) was a changeable young lady. Sometimes we had a glorious day, then came a chilly one, dull and dispiriting. She did little to prepare our minds for the summer which followed. And what a summer! lasting from the beginning of June to nearly the end of September. Writing in October, we seem only just to have parted from her. The memory of her exceeding loveliness remains with us still. Let no one remind me of the mischief the long dry weather did in other countries, or of the failure of the lesser crops here. You can never have the south wall all round your garden. Let me rather remember those splendid days, that golden sunlight shining on fair fruit and glorious flowers, those peaceful afternoons. It almost seemed that we had reached that magic land

“Where falls not any hail, or rain, or snow,
Nor ever wind blows loudly.”

Those gorgeous sunsets, followed by nights tranquil as nights beneath Italian skies! The world was so lovely that you longed for daylight to come back, that you might look on it again.

Grapes, Peaches, Nectarines, fruits which in this part of England are very uncertain out of doors, were this year particularly fine. I gathered some Sweetwater Grapes from a Vine which grows outside my house, and I can truly say they were as fine, both as regards size and flavour, as any in my vineries. Apples and Pears, too, are splendid. I don't know whether they look best hanging, ripe and luscious, from their parent tree, or on the dinner-table, or embedded in green leaves and arranged on rare china. And as for flowers, when did we ever see such Roses, Geraniums, Stocks, and Asters, as those which have gladdened our eyes this summer? Now, in late October, I can sit in my garden and enjoy the scent of the fragrant Heliotrope and

"pale Jessamine." They linger still, as if loath to go. Roses are not quite over. We have a Gloire de Dijon covered with buds, and a full-blown Rose or two here and there. The Geranium beds are still gay, and Dahlias rear their royal heads over many of summer's beauties now laid low. True, the trees are rapidly becoming bare; a soft wind gently stirs them, and

"Shatters their leaves before the mellowing year."

But even in this decay there is much to admire. The glowing tints of autumn contrast finely with the emerald green of the turf, refreshed by recent rains. The hedges are red with berries, which seem to foretell a severe winter. Let us, for the sake of the poor and destitute, hope that these may prove false prophets. Meanwhile we may feel that the summer which has gone is one which will always hold an honoured place in our memories. It will be long before we look upon its like again. N.



OLD TURNIP-SEED.

TO THE EDITOR OF THE 'GARDENER.'

DEAR SIR,—Now that the seedsmen are going to be *honest*, allow me to give them a "bit of a hint" about the *value* of their old Turnip-seed—at the same time I beg to hint to them also that *testimonials are fashionable*. The fact is, and I mean to show it, that these amalgamators do not know the value of their old Turnip-seeds. So long as old seed will vegetate strongly, the value of *new seed* is in an inverse proportion to the value of the old seed for late sowing.

In consequence of the great heat of the last summer I could not grow Turnips; I therefore took the first opportunity when rain appeared to sow largely where the early Potatoes had been cleared off. I sowed all my new seed of Early Dutch, Early Stone, Early American Green Stone.

Fearing I should be short "of things" for the winter supply, as I had very little of any thing *green* in the garden, I searched my old seed-bags, and I found some old Early Dutch Turnip; but, unfortunately, I cannot tell how old it was. However, I sowed it a fortnight after sowing the new seed, which was "up" and doing well at the time.

We were anxious to see young bulbs, even of the diameter of a shilling, and my "kitchen-man" and I paid frequent visits to the first-sown crop. This important official came to me and said, "Sir, have you noticed the last crop of Turnips lately?" "No, I have not." "Well," said the man, "them be the best."

Here is a proof that "old Twig's uncle" knew this secret, hitherto unknown by the seedsmen of our time, as he carried new Melon-seeds in his pocket for months before sowing it, to *make the young plants believe* that they had come of old seed. Had our seedsmen known that old Turnip-seed "bulbs" more quickly than plants from new seed, we should have had old seed advertised for late sowing at a higher price than that for new seed.—I am, dear Sir, yours,

EARLY DUTCH TURNIP.

ROYAL HORTICULTURAL SOCIETY.

THE following arrangements have been made by the Royal Horticultural Society for their exhibitions and meetings next year :—

March 13th, Show of Hyacinths and Spring Flowers. At this meeting prizes to the amount of nearly £50, offered by the principal bulb-growers in Holland, will be competed for ; and Mr William Paul, of Waltham Cross, will continue his exhibition of spring-flowering plants. April 17th, Show of Roses and Spring Flowers. May 8th, Show of Early Azaleas and Spring Flowers. During this month a Show of Pelargoniums will be held, at which subscription-prizes by the growers of these plants will be competed for. June 2d and 3d, Grand Summer Flower Show. June 15th, Special Prize Show. June 29th, Great Rose Show. The National Rose Show is incorporated with this Exhibition. A Grand Summer Exhibition of Flowering Plants and Fruits will be held at Manchester in July, at the same time as, and adjoining, the Royal Agricultural Society's Show.

The Fruit and Floral, and General Meetings for the election of Fellows, &c., will take place as follows—viz., January 19th ; February 16th ; November 16th ; and December 21st ; and on the first and third Tuesday in each month from March to October inclusive.—*Journal of Horticulture.*



PRESENTATION TO MR THOMSON, ARCHERFIELD, DIRLETON.

ON the 5th of last month, the friends and well-wishers of Mr Thomson, head gardener to the Right Hon. R. C. N. Hamilton, Archerfield, embraced the occasion of his leaving his present situation for the service of the Duke of Buccleuch at Drumlanrig, to show the high esteem in which he has long been held by them. At one o'clock a deputation from the subscribers to a very beautiful testimonial assembled in the Dirleton Castle Inn, for the purpose of presenting it in public to Mr Thomson. Among others present were Mr Hope, Fentonbarns ; Mr Begbie, Queenston Bank ; Mr Deans, East Fenton ; Mr Tod, Castlemains ; Mr Palmer, Dirleton ; Rev. Mr Howieson, Dirleton ; Mr Downie, of Downie & Laird, Edinburgh ; Mr Mitchell, of Lamont & Mitchell, Edinburgh ; Councillor Lewis, Edinburgh ; Mr Lees, Tynninghame Gardens ; Mr Gordon, of Niddry House, &c.

Mr Hope, who presided, said the present meeting was a deputation from the numerous personal friends and professional admirers of Mr Thomson, who, before he left this part of the country, desired to present him with a small but tangible token of their high esteem for his personal character, of their great admiration for his professional and scientific attainments, as evidenced in his published works, and of their appreciation of the success he had attained in the highest walks of practical gardening. In regard to Mr Thomson's literary attainments, he (Mr Hope) believed that the merits of his works had been cordially acknowledged by his professional brethren, while, to amateurs like himself, he had found them of the greatest use ; and he had no doubt, as they were better known, they would be more and more admired. Their style was invariably terse and clear, while his felicitous choice of words was only equalled by the correctness of the principles and the practice which they inculcated. It was now upwards of ten

years since Mr Thomson came to the parish; and year after year, as his friends became better acquainted with him, the more their esteem for him increased. In regard to Dirleton Gardens, he (Mr Hope) recollected when they were regularly cropped with potatoes and wheat. A short time before Mr Thomson came they were laid out in flower-beds, but since his magic wand was waved over them, they had become famed over the length and breadth of the land. Mr Thomson was now going to take charge of one of the largest, if not the largest, gardens and grounds in Scotland; and so far as it might be considered a professional step, it was one of the highest in the kingdom. All his friends rejoiced in this, though they could not but regret the loss they would experience in being deprived of that social intercourse with him which they had had the happiness to enjoy, and still more, the ready advice which he always cheerfully bestowed in aiding them to obtain increased luxuries from their gardens. He (Mr Hope) had no doubt that Mr Thomson would soon gain for himself new friends as attached as those he now left behind him. He carried with him the best wishes of every one; and in the name of the subscribers to the testimonial, he now begged Mr Thomson's acceptance of it, and to add that it was their earnest wish that he might long be spared to enjoy health, happiness, and prosperity.

The testimonial consisted of a very elegant gold watch and chain, a timepiece, and a silver tea-service to Mrs Thomson. The watch, which was of the most massive character, bore the following inscription: "Presented to Mr D. Thomson on his leaving Archerfield by a large number of friends, as a token of their admiration of his professional abilities, and esteem for his private virtues.—5th November 1868."

Mr Thomson, in acknowledging the gift, said: "I feel it to be quite beyond the compass of my power to command words which shall convey to you a proper impression of my feelings on this, to me, memorable occasion. When a person finds himself placed in such a position as mine at the present moment, it is most difficult to avoid putting the question to one's self,—Have I in any way merited or deserved such tokens of esteem and regard, and such a recognition as I am now honoured with, and presented with such a valuable and splendid testimonial as you have bestowed upon me? To say to you that I feel quite unworthy of all this is undoubtedly my feeling; but I will not dwell on that topic, seeing that I have been judged otherwise by you and those whom you are here to represent. I am one of those who think it an honourable ambition to act so as to earn the good-will and respect of my fellow-men; and Solomon says that 'A good name is better than riches, and loving-favour better than silver and gold.' Since I came amongst you, ten and a half years have rolled over us—to look back, it seems but yesterday. These years present many happy and pleasant resting-places for my mind to rest upon; and though clouds and gloom—the common lot of us all at times—have passed over my fireside, we can always look back with gratitude and thankfulness to the kindly feeling and many acts of disinterested kindness which we have experienced in Dirleton. The event of this afternoon has brought these many expressions and acts of good-will to a climax, and for these all, and especially for this, I beg to thank you with a sincerity of which I am profoundly conscious. Reference has been made to my professional labours and ability. Whatever of these can be laid to my credit has been acquired, to a very considerable extent, by contact with the long-celebrated gardeners of East Lothian, and to them I owe a double debt of gratitude for much substantial aid and good-fellowship. In the kind providence of God I have been successful in getting into the service of an employer who stands unrivalled as a nobleman of high honour,

good sense, and kindly feeling; and I trust I may be enabled to fill that situation with as much credit to myself and satisfaction to the Duke of Buccleuch as Mr M'Intosh has filled it for the long period of twenty-eight years." Mr Thomson concluded by again thanking his friends for their great kindness and good feeling towards him, in making him such a splendid present.

Cake and wine were handed round after the presentation. Among other toasts, the health of Mrs Thomson and family was given by the Chairman, and very cordially responded to. The proceedings were of a very agreeable character, the attendance of so many gentlemen from different parts of the country being of itself a proof of the high estimation in which Mr Thomson is held by his friends.—*Haddington Courier.*

Notices to Correspondents.

[Several interesting communications are unavoidably postponed to next month.—Ed.]

Homère was carefully cut, and although possessing a fine head, I did not get a single Rose. Does it require any particular pruning, and when? Madame Van Houtte did not make much wood, but strong, and scarce a Rose.

In last year's publication of the 'Gardener' there was one plate; this year, while the articles continue to be truly valuable, there has been no plate. Mr D. Thomson's 'Book of the Flower-Garden' is principally a reprint of your publication; why not treat us to his engraved plans, &c., at a cost that would compensate; or introduce them, or similar, in next year's publication, and charge extra for these numbers? Z

[We give all the price will afford; and though Z. and many others may be ready and willing to pay the extra cost of engravings, we fear the many on which we depend are not. We are very much gratified to learn that he appreciates our efforts to supply sound practical letterpress articles.—Ed.]

J. K.—Plant the following Vines for keeping late: Black Alicante, West St Peters, Mrs Pince's Muscat, and Lady Downes, as black varieties. As you have but little heating-power in your house, we are at a loss for a good White Grape that will keep well. The Muscat of Alexandria is by far the best Grape of its colour for keeping till February or March, but it will not ripen properly with you; therefore plant one Resin de Calabrica, and one Trebbiana or True White Tokay—though both, we fear, require more heat than you can give them.

W. S.—There are too many gardeners under the thralldom you complain of. Your best plan will be to explain the matter to your employer, who, on reflection, will see that such a regulation must be injurious to his own interests. If you are worthy to hold such a situation, you should have power to order such trifles as you name without going or sending some miles to get an order signed by the steward; if you are not fit to have such power, you are not fit to have the charge you have.

A. P.—We do not pretend to be able to decide the question you put to us. We consider all seedlings you raise to be your employer's, unless you have an arrangement to the contrary. On the other hand, you were not engaged to raise

new seedlings, and no doubt much of the time you have spent on them was such as might be considered your own; and if you explain this to your employer, we are all but certain he will give you an interest in them beyond what may be required for his own supply and that of his friends. It is the interest of his class to do so, else a blow of discouragement will be given to that skill and ingenuity to which they owe a great part of the new fruits and flowers that give comfort and beauty to their residences; and if he looks at the subject in this light your desire will be met.

MRS N.—Thanks for your paper. If we can find room for it we shall insert it.

A FLOWER-GARDENER.—The system of massing greenhouse plants in flower-borders, which in the present day has been carried to such perfection, began about thirty-five years ago.

MARY.—A class of very interesting succulents, that are in part hardy and others nearly so, are making their way into the bedding systems in different parts of the country. We shall give a list of their names in an early number. Ladies could manage them with great ease, as they are of easy culture, and are not liable to damp off during the winter. The only guarantee you have that the seeds you buy are genuine, is the respectability of the firm you deal with. They, in their turn, may be deceived; but they will use an amount of caution and judgment in the selection they make that you cannot bring to bear on such a matter. Do not be caught by that—in the case of seeds especially—awfully deceptive word *cheap*. We have known a farmer save 2d. a-pound on his turnip-seed, by which he saved 6d. per acre, and lost his crop to a great extent through the inferiority of the variety he purchased.



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